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ON THE WORKING OF THE

DEPARTMENT OF AGRICULTURE

DURING

1933-34.

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1935.

Report of the Department of Agriculture for the year 1933-34.

OFFICE OF AGRICULTURE—MALTA.

Valletta, 18th March, 1935.

Sir,

I have the honour to forward the subjoined report on the Agriculture of Malta during the year 1933-34, ending practically with the month of September, 1934, and on the working of the Department of Agriculture during the financial year 1933-34.

I have the honour to be,

Sir,

Your obedient servant,

(Sd.) G. MICALLEF,
Superintendent of Agriculture.

His Honour,
The Lieutenant-Governor,
The Palace.

REPORT OF THE SUPERINTENDENT OF AGRICULTURE.

The present Report covers the agricultural year 1933-34 ending about the 30th September, 1934 and the working of the Department of Agriculture during the financial year 1933-34.

Personnel. Dr G. Micallef took up his present duties as Superintendent of Agriculture on the 8th December, 1933, when Prof. John Borg, M.A., M.D., retired on pension.

The Superintendent of Agriculture and the Director of Experimental Farms attended the World's Tenth Dairy Congress which was held at Rome and Milan, in April-May last.

From the 20th to the 26th June, the Director of Experimental Farms formed part of an official delegation led by the Chief Government Medical Officer and including a Civil Engineer of the Public Works Department, to inspect and report on the towers recently installed at Reggio, Calabria, by Messrs. Boggiano Pico of Genoa for the hygienic treatment of sweepings and house refuse, by means of fermentation by compressed air and their utilization for the purposes of Agriculture.

GENERAL REVIEW OF THE ADMINISTRATION OF THE DEPARTMENT.

The Department of Agriculture was created as an independent body in 1920 mainly for the purpose of combating the Phylloxera of the vine and the Icerya Purchasi of Citrus fruits. Many of the activities often associated with a Department of Agriculture had already been provided for by other branches of the Administration, viz., Agricultural Roads (Public Works), Veterinary Services (Public Health), Protection of insectivorous birds (Police), Wine-making (Customs), Land settlement (Public Works). The Department of Agriculture was, apart from Viticulture and Plant Pathology, mainly concerned with Public Gardens and ornamental road plantations which have very little to do with Agriculture proper. Of late, the scope of the Department has been extended to other matters, such as, the technique of wine-making, the marketing of agricultural produce, the development of animal husbandry, etc.; but land settlement and the valuation of land improvements have

remained under the charge of the Public Works Department. It is considered that the Government of Malta, owning as it does about one-third of the rural property of these Islands, is in the unique position of being able to promote agricultural developments in any desired line, by simply stipulating them in the periodical renewals of lease, if means could be provided for the carrying out of such stipulations under the control of this Department.

Whilst constructive work has been severely limited by conditions over which the Department has been able to exercise very little control, ample scope has been found for a general expansion of former activities and for extension and improvement in other directions, of which the following are the main features.

Poultry. A Model Poultry Farm is now complete at the Hammieri Educational Farm, consisting of thirty-three breeding pens, eight brooder and seven pullet houses, the former with double and the latter with single runs, together with store room, mixing room, incubator room, and office-room for the Poultryman. The Poultry Farm has recently been stocked with three pedigree breeds of fowls imported from England, which will enable the Department to distribute fertile eggs, baby chicks and cockerels, and gradually replace all mongrel flocks existing in the Islands. A section of the Farm is reserved for the selection of the Black Maltese Fowl, which should prove to be a fine bird and a good layer.

The greatest drawback with local breeders is the huge mortality due to disease, particularly Fowl Pox and Avian Diphteria—two aspects of the same disease—which is responsible for 70% of the annual toll on the fowl population. Fowl pox and anti-Diphteria vaccines were imported from the Ministry of Agriculture in London, and anti-Cholera vaccines from Milan, and a vaccination campaign was opened in July. Between July and September about 3,000 fowls had been vaccinated on Farms in Malta, Gozo and Comino, in the course of demonstration lessons, and about half that number of vaccines had been distributed gratuitously for application by the breeders themselves.

Swine Husbandry. All local breeds of swine are of bad shape, unthrifty, and very slow in maturing. To improve swine husbandry 10 pedigree boars of the four best English breeds (Large and Middle White, Berkshire and Wessex Saddleback) suitable for Malta were imported in March for the service of sows. Five of these were located at the Hammieri Stock Farm, in Malta, while the other five, together with three others bred on that Farm, were located on different private farms in Gozo.

Farmers were quick to realize the outstanding importance of these boars, especially in Gozo, and patronage of the boars at times became so close that strict orders had to be issued to keepers, from time to time, to limit the number of services for each boar. Other weaner boars are being reared on the Department's Farm at Hammieri for similar distribution as soon as they are of age. Over 50% of the sows in Malta and Gozo had been bred to our boars by the end of September.

Field Crops. Much attention has been given to the cultivation of important vegetables such as potatoes and tomatoes. Particular care was given to the cultivation of wheat, which is now the staple crop that can replace cotton on stiff and clayey soils. Three improved strains of early Italian wheat—Giulio Cappelli, Virgilio and Mentana—have been tried on the Farm with great success. Two varieties—Giulio Cappelli and Virgilio—cropped over sixty and sixty-five per cent more than the local Red wheat which served as control. A large scale experiment has been repeated for next season with these two strains. For this purpose 30 experimental plots, each of about half an acre, with an equal number of controls have been established on different private farms in both Islands, with varying soil, different methods of cultivation and different treatments.

Viticulture and Ooenology. Efforts have been made to improve and extend viticulture and wine-making in these Islands. Demonstration lessons have been given in private vineyards and wineries, and in the Government nurseries, regarding the best methods of planting, pruning, grafting and rearing of the vine. Lectures have

been given to wine-makers in various centres on the methods of making, correcting and conserving wine, and copies of a bulletin prepared by the expert on the technique of wine-making have been sent to every individual vintner. An oenochemical laboratory has been installed at the Head Office for the analysis of must and wine, and the Wine Expert has been flooded with requests for analyses, corrections of must and wine and advice.

A National Vintners' Competition has been opened also for this year with substantial prizes and diplomas, which has given, and will continue to give during the winter, ample opportunity to the Expert to visit wineries and give advice on the spot.

The attention of the Department has been directed to remedy one of the worst features of Maltese Viticulture, namely: the great variety of non-descript vinifera vine, producing grapes of inferior quality, unsuitable both for table use and for wine-making.

Nine Experimental Vineyards have been established on private land (5 in Gozo and 4 in Malta), for the purpose of trying—

(a) the adaptability to climate and soil;

(b) the affinity of graft bearers with selected varieties of vinifera;

(c) productivity.

These vineyards have been established for a period of 15 years, the Government undertaking to supply all necessary fungcides, insectcides, and artificial fertilizers, while the grower has to supply the land, the capital outlay, farmyard manure, and all the necssary labour, under the instructions of the Wine Expert. The crop, of course, goes to the grower.

Field operations in these farmyards will be turned into object and demonstration lessons, open to the planters of the neighbourhood.

Plant Pathology. A wider activity was shown also in this branch of the Department. A Plant Pathology Brigade, has been unceasingly touring the country, showing farmers the use and method of application of different kinds of sprays, fungicides and dustings. The Phytopathological service is admittedly very limited and is capable of a much wider extension. This service has relied too much on persuasion; but insect pests, like the Mediterranean Fruit Fly, which is responsible for the drop of 40% of our citrus and deciduous fruits, and the more conspicuous plant parasites and weed pests, such as the potato blight and the broom rape of legume plants, call for urgent attention and compulsory action.

An outstanding feature of this year's work was the introduction of the *Aphelinus mali* to combat the woolly aphis of apple trees. Practically all the apple orchards of Malta and Gozo are now infested with woolly aphis (*Eriosoma lanigerum* Hausm). The outbreaks, both last year and this, were very severe at Rabat, Dingli, Mtaħleb, Baħrija, Boschetto, in Malta, and Wied Biġemma, Wied ir-Riħan, San Blas, and Ġnien Emrik, in Gozo. The *Aphelinus*, a beneficial insect, hardly visible to the naked eye, has been found to be the natural enemy of the Woolly Aphis as the *Novius Cardinalis* of the *Icerya Purchasi* of the Citrus Fruits. Colonies were imported from the Royal Phytopathological Observatories of Genoa, Verona and Turin, and established in several localities in Malta and Gozo. Growers will learn with satisfaction that the *Aphelinus* has already worked great havoc on the Woolly Aphis.

Public Gardens and Ornamental Road Plantations. A wider activity was shown also in this Branch of the Department which caters for some of the most popular amenities of the Island. The extension and formation of new flower beds, the introduction of new plants noteworthy for their beauty, the labelling of plants—much appreciated by the public—and generally other improvements in San Antonio Public Gardens, the thorough overhauling of Blata-il-Bajda Garden, the new lawns at the Upper Barracca and Kalkara Gardens—are outstanding features, which testify to this

activity. The new extensive plantation of evergreen trees at Ta Braksja Glacis, which is still proceeding, deserves special mention.

Organization. Several organization schemes are before the Government. The following Draft Ordinances and Regulations have been published during the year, and some of them (marked with an asterisk) have since become law:—

An Ordinance to facilitate the collection and preparation of Agricultural Statistics. (*)

An Ordinance for the control of the exportation of agricultural produce (*).

Regulations for the control of the export of potatoes (*).

An Ordinance and Regulations for the control of the importation of seed potatoes.

Regulations for the prevention of the spread of the Roncet of the vine (*).

Propaganda. Propaganda work has been intensified in various directions—spraying demonstrations by the Plant Pathologist, lectures and demonstrations by the Wine Expert, the Vintners' Competition, a Boar Service Competition, the Vine and Wheat Experimental Plots in private farms, advice on the spot in various farm houses on the housing and feeding of animals, and in wineries on the technique of wine making, the fowl pox and fowl cholera vaccination campaign, the publication of leaflets on matters of interest to farmers, and last but not least the publication of a monthly Journal.

Details of these works are given in the annexed reports.

Mr. Stockdale's Visit. In the year under review the agricultural industry in Malta has been subjected to a critical examination by no less an Authority than Mr. F. A. Stockdale, C.M.G., C.B.E., the Agricultural Adviser to the Secretary of State for the Colonies. During his brief stay here (23rd March to 8th April), Mr. Stockdale has made a wide survey of agricultural conditions in Malta and produced an exhaustive report packed with suggestions and recommendations which has been printed separately in English and Maltese.

Much of the work done during the year has followed closely the lines laid down in that invaluable report.

Grants from Colonial Development Fund. In consequence of Mr. Stockdale's principal recommendations the following Grants have been made to us out of the Colonial Development Fund—

(1) for the Establishment of a Government Stock Farm, the construction of a Vocational School and Hostel, and the appointment on a five years' contract of an Adviser in Animal Husbandry, a free grant of £22,000 spread over five years;

(2) for research on the immunization of goats against *Ondulococcus Brucei* (*Brucella melitensis*) a free grant of £3,000 and a loan of £3,900 for the first stage (2 years) of the proposed research, and a further grant of £3,750 if the results obtained from the first investigational stage showed that a definite campaign for the immunization of goats would be justified;

(3) for the appointment of an Adviser in Agricultural Marketing, a free grant of £5,000 and a loan of £2,000,

(That is, altogether £30,000 free grants, and £9,650 loans).

The advances by way of loan are to be free of interest for the first two years, and thereafter to bear interest at 3½%, and to be repayable in five years (that is seven years from the date of advance) by the method of equated annuities covering principal and interest.

Plans have been prepared of all the proposed buildings—vocational school and hostel, cowshed, dairy, piggery, rabbitry, goatshed, manure shed and pit, silo, together with quarters for staff. The work of construction is already under way.

A word of thanks is due to the Parish Priests and Rectors of outlying churches, for their readiness in complying with my frequent requests to publish notices, instructions and appeals to farmers on urgent matters of interest to the agricultural community.

AGRICULTURAL PROTECTION.

An important measure of protection against foreign competition in several lines of local agriculture and industries dependant on local agriculture was brought about by the Import Duties Ordinance 1917 (Amendment) Act, 1933, which came into force on the 12th June 1933. Prior to that Act beef, pork, mutton and dressed poultry paid a duty of 12s/7d per 100 kilograms, live cattle, sheep and swine 5s/- per 100 kilograms, tomato paste, purée and extracts 4s/- per 100 kilograms, potatoes, whether table or seed, paid 1s/1 per 100 kilograms, while eggs and egg products, were free, as were all kinds of fruit and vegetables. All these tariffs had a fiscal purpose and made no discrimination on behalf of agriculture. By the amending Act a system of seasonal tariffs, varying between 2s/- and 5s/- was introduced for most fruits raised locally, and covering lemons, peaches, apples, pears, plums and figs, while grapes were made to pay a duty of 5s/- per 100 kilograms all the year round to bring them into line with the duty collected on common table wine. Fresh vegetables including onions, garlic, peas, and beans were taxed during the whole year, as were also table potatoes. Seed potatoes were made absolutely free to reduce the cost of production, potatoes being our principal export produce. Eggs in shell were left free but egg products, such as liquid or frozen egegs or egg powder, were taxed to a prohibitive figure, while a system of marking imported eggs, with the name of the country of origin was provided by Act No. XXXIX of 1933 to protect the local article against unfair competition. Appendix II shows a huge increase in the importation of eggs due mainly to the taxation of egg products. The chief object of that Act was, however, the revival and protection of three very important industries, namely, the raising of pork, the fattening of imported store cattle, the canning of tomatoes and the manufacture of tomato products. The duty on pork was raised from 12s/7d to £2 per 100 kgs., while that on swine of any size was raised to £1 per 100 kgs. With regard to cattle the new duties were not meant to protect local breeding, as much as the time-honoured practice of the local fattening of imported store cattle. A distinction had to be made between fat cattle ready for slaughter, and lean cattle requiring a further period of at least three months fattening. The uniform duty of 5s/- per 100 kgs. on fat and store cattle had proved to be in practice a preferential tariff on behalf of fat animals, as fat animals dress a higher percentage of beef. Under the revised tariff the duty on fat cattle was raised to £1 per 100 kgs., while the duty on stores was left unaltered. This differential tariff was calculated to secure to local labour the largest possible share of beef raising, without the risk of hitting unduly the consumer, either as regards continuity of supplies or reasonable prices.

A further measure of protection was adopted on the 1st April, 1934, on the occasion of a radical revision of the Import Duties Ordinance No. III of 1917. On that occasion the duty on live swine was again raised from £1 to £1. 12. per 100 kgs., that on sheep from 10s/- to 12s/6 also per 100 kgs., and that on poultry and rabbits from 10 to 20 per cent *ad valorem*, so as to bring them on a par with the duty payable on the corresponding fresh or frozen meat. On the other hand improved livestock for breeding purposes, and concentrated feeding stuffs, such as residue meals and oil-cakes, were exempted from duty, while to prevent the exodus of feeding stuffs, an *ad valorem* duty of 20% was imposed on the export of milling offals and brewers' grains.

To assist fruit-growing and horticulture the duties varying between two shillings and five shillings imposed by the former Act were again raised to a uniform rate of 5s/- per 100 kgs. and extended to pears, nectarines and bananas, while the *ad valorem* duty on preserved fruits was raised from 15% to 20%.

To protect the wine industry, exemption from duty was extended to the importation of new (empty) wine-casks, while a duty of 5s/- per cask was placed on the re-export of non-returnable casks.

Industrial Development.

Three lines of industrial development deeply rooted in our agricultural are deserving of a passing mention, viz: the raising of meat, the canning of tomatoes and tomato products manufacture, and wine making.

Meat Production. The yearly average consumption of meats and meat products by the civil population amounts to half a million pounds sterling, or a little over £2 per head. Of this amount about 56% is the value of local produce, the remaining 44% representing the value of imports either in the shape of live stock or of dead meat. The value of all meats consumed during the year 1933 amounted to £561,317, of which £224,975 represents the value of imports, while £336,342 (60%) that of the home production. The consumption of meat especially beef, is rapidly increasing every year, in fact, while beef was selling at £6 per qantar (†) in 1930 as against £4. 15 during the year 1933, the value of the total consumption of beef for 1930 amounted to £176,249, while in 1933, with prices lower by 20%, it reached £262,618. These remarks apply in similar manner to other butcher's meats and to all kinds of preserves.

The sources and values of our meat consumption for the year 1929-33 are tabulated in Appendix III.

Canning of Tomatoes and Manufacture of Tomato Products. The manufacture of tomato products has made a bold step forward. This industry had been dwindling away for a number of years, owing to free competition from abroad. Only 8 cwts. of tomato paste valued about £11 were exported in the year 1931, 438 cwts. worth £370 in 1932 and 40 cwts. worth £40 in the year under review, while imports of tomato sauce and purèe for the corresponding years were valued about £12,978, £14,356 and £7,396 respectively. The canning of peeled tomato and the manufacture of tomato sauce, purèe and extracts was revived by Act No. XXXIX of 1933, which began to operate on the 12th June of that year. That Act, while protecting the grower by a seasonal duty of 5s/- per 100 kgs. on imported fresh tomatoes, aimed principally at establishing the local canning industry by the imposition of a duty of 10s/- per 100 kgs. on all kinds of tomato products imported into Malta. It may be stated that the reclamation of the old cotton lands depends much on the success of this industry.

The quantities of tomatoes treated by three canneries in 1933 amounted to 44,684 cwts. Of these 28,427 cwts. were made into concentrated extracts or purèe, 9,227 cwts. were canned as peeled, and 7,030 cwts. were made into tomato paste. Both the tomato purèe and peeled tomatoes are canned into standard tins, while the old-fashioned tomato paste is exported in bulk.

In 1934 a fourth cannery started work. The quantities of tomatoes handled by these canneries during the year amounted to 31,727 cwts. of which 26,927 cwts. were made into tomato extracts or purèe and 4,900 cwts. were peeled. Small quantities of vegetables were also canned, pickled or conserved under oil, that is, 470 cwts. in 1933 and 700 cwts. in 1934.

During the year 1934 local canners have exported, principally to the United Kingdom, quantities of peeled tomatoes in standard tins, valued £4,321.

The imports of tomato products for the five years 1929-1933 and the home production of tomato products for the years 1933-34 are shown respectively in Appendices IV and V.

(†) 1 qantar = 1.75 cwt.

Wine-making. The wine industry is also capable of a wide extension. The value of common table wines imported during the year under review amounted to £60,000, while the local production of natural wine has been estimated at 53,959 barili valued at £42,168. The real price of this wine was about 16s/- per barile; (1) but as local wine has to compete with imported wines selling at 10s/- per barile or lower, local producers have been driven to manufacture large quantities of second wines, for mixing with natural wines, so as to lower prices and be able to meet foreign competition. Such wines are sound and in no way dangerous to health, but even so they are illegal.

Obviously the wine industry stands in need of a thorough re-organization.

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(1) Barile=8.56 Imperial gallons.

APPENDIX I.

EXPENDITURE.

for the financial year 1933-34.

A. *Personal Emoluments*:				
Office		£1,641 0 5		
Experimental Farms		713 6 8		
Gardens and Plantations		5,392 4 1		
Plant Pathology		644 13 4		
Viticulture and Oenology		664 19 11		
			£ 9,056	4 5
B. *Other Charges*:				
Office		£1,040 11 6		
Experimental Farms		1,423 7 2		
Gardens and Plantations		3,844 8 2		
Plant Pathology		463 4 3		
Viticulture and Oenology		716 6 1		
Animal Husbandry		1,178 11 11		
		£8,865 18 0		
Subsidies:—				
Società Economico Agraria ...	£225 0 0			
Board of Agriculture, Gozo ...	200 0 0			
Malta Horticultural Society ...	80 0 0			
Imperial Bureau of Entomology	44 0 0			
Imperial Agricultural Bureau	20 0 0			
Malta Horse Show	50 0 0			
Bee-Keepers	24 7 6			
		£ 643 7 6		
			£ 9,309	16 7
Extraordinary Expenditure			687	4 4
		Total	£19,053	5 4

The expenditure in the preceding financial year amounted to £17,772.2. 2.

REVENUE.

The amount of revenue collected during the year was £1,911. 9. 10¼ as against £2,074. 16. 3 in 1932-33.

APPENDIX II. Return showing the Quantities and Value of Eggs imported into Malta during the five years ended 31st December, 1933.

Countries of origin	1929		1930		1931		1932		1933		Totals Imports		Average Yearly Imports	
	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value
	Dozen	£	Dozen	£	Dozen	£	Dozen	£	Dozen	£	Dozen	£	Dozen	£
Egypt	9,5710	4,482	77,320	3,088	153,560	5,175	240,260	7,345	357,260	8,035	924,110	28,125	184,822	5,625
France	3,500	259	—	—	—	—	—	—	—	—	3,500	259	700	51·8
Algiers	4,666	320	720	48	—	—	—	—	—	—	5,386	368	1,077·2	73·6
Morocco	6,600	712	20,400	1,302	25,920	1,177	3,600	225	—	—	56,520	3,416	11,304	683·2
Syria	11,160	625	43,700	1,827	30,000	1,108	4,500	90	—	—	89,360	3,650	17,872	730
Tunis	2,160	135	420	24	—	—	—	—	—	—	2,580	159	516	31·8
Italy	10,160	642	45,720	1,866	101,270	3,512	97,800	2,985	63,900	1,427	318,850	10,432	63,770	2,086·4
Libya	10,020	615	38,340	2,207	74,030	3,350	26,470	1,395	23,640	953	172,500	8,520	34,500	1,704
Smyrna	3,600	137	—	—	—	—	—	—	—	—	3,600	137	720	27·4
H. M. Ships' Stores	500	30	—	—	—	—	—	—	—	—	500	30	100	6
Belgium	—	—	3,000	60	—	—	8,920	466	—	—	11,920	526	2,384	105·2
Greece	—	—	—	—	6,600	215	—	—	—	—	6,600	215	1,320	43
Scala Nuova ...	—	—	—	—	2,120	58	—	—	—	—	2,120	58	424	11·6
Turkey	—	—	—	—	9,600	252	46,735	1,593	72,520	2,892	128,855	4,737	25,771	947·4
United Kingdom ...	—	—	—	—	—	—	8	3	42	21	50	24	10	4·8
Bulgaria	—	—	—	—	—	—	100	4	3,360	133	3,460	137	692	27·4
Spain	—	—	—	—	—	—	6,000	100	—	—	6,000	100	1,200	20
Albania	—	—	—	—	—	—	—	—	35,760	1,487	35,760	1,487	7,152	297.4
Yugo-Slavia ...	—	—	—	—	—	—	—	—	103,280	3,697	103,280	3,697	20,656	739·4
Total ...	148,076	7,957	929,620	10,422	403,100	14,847	434,393	14,206	659,762	18,645	1,874,951	66,077	374,990·2	13,215·4

1929		1930		1931		1932		1933		Total		Average:
Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	
Dozen	£	Dozen	£	Dozen	£	Dozen	£	Dozen	£	Dozen	£	374,990 Dozen.
148,076	7,957	229,620	10,422	403,100	14,847	434,393	14,206	659,762	18,645	1,874,951	66,077	

N.B.—The marking of imported eggs was started on the 15th August, 1933, in terms of Act No. XXX of 1933.

APPENDIX III.

Return showing the total and relative values of meats and meat

Articles	1929			1930		
	Imported	Home fed	Total	Imported	Home fed	Total
	£	£	£	£	£	£
Cattle	133,983	97,353	231,336	112,282	63,967	176,249
Swine	5,211	112,341	117,552	464	86,380	86,844
Sheep	1,387	5,664	7,051	684	7,722	8,406
Goats	—	4,927	4,927	—	4,923	4,923
Lambs	—	4,472	4,472	—	4,278	4,278
Kids	—	556	556	—	787	787
Poultry and Rabbits	114	38,800	38,914	3	39,200	39,203
Beef, mutton and pork	2,101	—	2,101	—	—	—
Bacon and ham	28,202	—	28,202	27,366	—	27,366
Salted meat	3,311	—	3,311	3,806	—	3,806
Tinned and potted meat	10,289	—	10,289	11,852	—	11,852
Other meats	6,949	26,982	33,931	2,627	28,083	30,710
Frozen poultry, rabbits and game	589	—	589	515	—	515
Lard *	55,053	—	55,053	47,006	—	47,006
Gross Total	247,189	291,095	538,284	206,605	235,340	441,945
Less Exports and Re-Exports ...	1,330	—	1,330	1,232	—	1,232
Net Total	245,859	291,095	536,954	205,373	235,340	440,713

* Home killed suet and dripping (raw) have been included under "Other meats"

products consumed in these Islands during the years 1929-1933.

1931			1932			1933			Grand Total		
Imported	Home fed	Total	Imported	Home fed	Total	Imported	Home fed	Total	Imported	Home fed	Total
£	£	£	£	£	£	£	£	£	£	£	£
113,595	77,117	190,712	104,412	121,738	226,150	114,493	148,125	262,618	578,765	508,300	1,087,065
1,358	91,905	93,263	8,243	72,469	80,712	10,215	96,522	106,737	25,491	459,617	485,108
556	8,592	8,148	945	5,881	6,826	720	6,465	7,185	4,292	34,324	38,616
—	4,115	4,115	—	5,673	5,673	—	4,822	4,822	—	24,460	24,460
—	4,442	4,442	—	5,221	5,221	—	5,464	5,464	—	23,877	23,877
—	955	955	—	765	765	—	628	628	—	3,691	3,691
356	39,600	39,956	214	40,000	40,214	404	40,000	40,404	1,091	197,600	198,691
—	—	—	6,178	—	6,178	5,671	—	5,671	13,950	—	13,950
25,142	—	25,142	23,141	—	23,141	24,700	—	24,700	128,551	—	128,551
1,402	—	1,402	1,304	—	1,304	1,368	—	1,368	11,191	—	11,191
12,746	—	12,746	12,968	—	12,968	14,528	—	14,528	62,383	—	62,383
10,936	31,562	42,498	6,114	31,953	38,067	6,332	34,316	40,648	32,958	152,896	185,854
476	—	476	444	—	444	48	—	48	2,072	—	2,072
45,949	—	45,949	38,704	—	38,704	46,496	—	46,496	233,208	—	233,208
212,516	258,288	470,804	202,667	283,700	486,367	224,975	336,342	561,317	1,093,952	1,404,765	2,498,717
1,898	—	1,898	1,181	—	1,181	860	—	860	6,501	—	6,501
210,618	258,288	468,906	201,486	283,700	485,186	224,115	336,342	560,457	1,087,451	1,404,765	2,492,216

APPENDIX IV.

Importation of Tomato Sauce and Extracts of Tomatoes during the years 1929-33.

Country	1929		1930		1931		1932		1933		Total		Yearly Average	
	Cwts.	£	Cwts.	£	Cwts.	£	Cwts.	£	Cwts.	£	Cwts.	£	Cwts.	£
United Kingdom	...	...	...	...	...	...	...	...	8	34	8	34	1·60	6·80
Greece ...	15	29	...	...	3	12	52	17	...	...	70	58	14·00	11·60
Italy	12,883	24,789	15,363	17,979	11,990	12,920	9.373	13.884	5,236	7,359	54,845	76,931	10,969·00	153,86.20
Egypt... ...	...	...	...	...	...	...	...	...	1	1	1	1	·20	·20
Spain	351	576	...	...	...	...	...	...	...	...	351	576	70·20	115·20
Tunis	91	250	60	35	2	2	154	290	...	...	307	577	61·40	115·40
Lybia	...	...	...	...	30	44	10	15	...	...	40	59	8·00	11·80
U. S. A. ...	...	...	...	...	...	...	150	150	...	...	150	150	30·00	30·00
Ex baggage ...	...	...	...	..	...	..	..	...	1	2	1	2	·20	·40
Totals ...	13,340	25,644	15,423	18,014	12,025	12,978	9,739	14,356	5,246	7,396	55.773	78,388	11,154·60	15,677·60

APPENDIX V.

Showing the Quantities of fresh tomatoes treated by the canning industry.

Year	Turned into concentrated extracts or puree	Canned as peeled tomatoes	Turned into tomato paste	Total quantity treated
	cwts.	cwts.	cwts.	cwts.
1933	28,427	9,227	7,030	44,684
1934	26,927	4,900	—	31,827

STATISTICS.

1. Meteorological.

The rainfall was under the average and the rainy period was very short. The first useful rain fell on the 19th November, and on the night of the 23rd a great storm caused considerable damage in Gozo, particularly in the Xlendi Valley and the Wied Siekel District. Compensation amounting to £21 was paid by the Government to certain farmers on the suggestion of this Department, besides £100 to the fishermen of Xlendi. Although the precipitation caused by the storm reached well over 10 inches in some places in Gozo, the mean fall was still under the average and the year was one of exceptional dryness. The rainy season practically came to an end on the 7th March, lasting only three months and a half; but the frequent light showers of April and May, together with abundant dews have considerably assisted the ripening of crops. The monthly and total rainfall for the year as compared with that of 1932-33 is shown in Appendix VI.

2. Crops.

The total area under cultivation was 44,969 acres (including about 2,000 under a second crop) namely: 18,967 acres under cereals, 12,416 acres under vegetables including melons and tomatoes, 8,818 acres under forage crops, 1,794 acres under cumin and cotton and 2,974 acres under vines and fruit trees. In this report the returns for the four autumn crops, namely, maize, tomatoes, melons and cotton are brought up to date. In previous reports these crops were always left over to be returned in the report of the following year.

General Survey. The growing of vegetables is increasing from year to year keeping pace with the increase of the urban population on the one hand and of the water supply and the means of pumping it up on the other. The number of air motors and oil engines for pumping both surface and deep well water has greatly increased, and as a consequence the cultivation of "greens" has almost doubled itself within the last five years. The area under kitchen garden, both rirrigated and dry-farmed, was, this year, 3,200 acres as against 3,045 acres for last year, and a mean area of 2,139 for the last five years. On the contrary, the cultivation of fruit trees with the exception of the prickly year and the vine is on the decrease. A number of fig, pomegranate, olive, almond and carob trees disappear annually to make room for vines and vegetables. Of late years, owing to the ravages of the Meditterranean Fruit Fly (*Ceratitis capitata*, Wied.), thousands of peach and nectarine trees have been uprooted or regrafted to early varieties, ripening in May before the first generation of the Fruit Fly makes its appearance in June. The peasants used to attribute all the harm to the drainage effluvia, and, although quite a number of them have seen the fly at work, very few, if any, of them realize the necessity of fighting it by collecting and destroying any rotten fruit which serves it as host. Progress in this direction can only be secured by legislation and compulsory action.

The gradual disappearance of the fruit trees is, however, being largely compensated by the planting of new vineyards. Viticulture and wine-making are two of the principal lines of agriculture in Gozo, and the cultivation of the vine is occupying new land every year. The value of foreign common table wine imported in Malta during the year amounted to £60,000 a great part of which might be produced in Gozo, if this promising industry could be afforded some form of the expert guidance recently secured by the Department, is, in my opinion, the only means of restoring to remunerative cultivation the erstwhile cotton lands which are generally made up of a mixture of stiff clay and loam. Large tracts of sloping marl at such places as Mdina, Rabat, Buskett, Fawwara, tal-Għalja, Mtarfa, Għajn Hadid and Qammieh in Malta, and on the hill-sides in Gozo, are being gradually abandoned as being unfit for the cultivation of vegetables and not sufficiently remunerative with wheat, while cotton has become a forlorn hope. Only vines (and to some extent sugar melons and tomatoes) may be expected to give remunerative returns.

Wheat. The area under wheat was 7,689 acres in Malta and 1,640 acres in Gozo and Comino, a total of 9,329 acres, as against last year's 9,617 acres. These figures show a slight general decrease in the wheat acreage, which is mainly due to crop rotations. The estimated yield in grain is 38,800 quarters, the corresponding figure for last year being 38,082 quarters. Although the spring was dry, both the yield (32 bushels per acre) and the quality of the grain were satisfactory. Wheat in Malta is a food crop, and only small quantities of it reach the market.

Barley. Barley was grown on an area of 3,149 acres, and meslin on an area of 1,840 acres, a total of 4,989 acres as against 5,633 acres in the previous year. Meslin, a mixture of wheat and barley, is cultivated almost exclusively in Gozo. The total yield was estimated at 28,610 quarters, namely: barley 18953 quarters and meslin 9,657 quarters as against last year's crop of 18,997 quarters of barley and 10,738 quarters of meslin. The light showers and heavy dews of April and May, coupled with cool weather, account for the increase in yield.

Maize 1933. Maize was cultivated on 152 acreas, of which 33 acreas were in Malta and 119 in Gozo, with a production of 1,129 quarters. For this year (1934) maize was cultivated on an area of 90 acres with a production of 383 quarters.

Broad Beans. The area under broad beans (1,857 acres) was greatly above the average (1,590 acres) and slightly under last year's (1,958 acres). The increase was due to the failure of sulla which had germinated with the early rains and had then been killed by the long autumn drought, as lands where sulla fails are resown with beans or vetches. Owing to late sowing, beans as well as all other legume plants were generally free from broomrape, which germinated and died out before the first useful rains, for want of hosts.

Vetches. The area under vetches (for dry-feeding) was 2,702 acres (only 572 acres in Gozo), yielding 9,084 quarters. Since the light showers and cool weather of May and the June rains favoured rather heavy attacks of aphides, the pods could not reach their full growth, and the grain remained small.

Potatoes. Potatoes are grown in Malta all the year round. Four crops may be distinguished: an early winter crop (irrigated) sown in August and September and lifted in November-December, the main Winter crop sprouting with the first rains and lifted in January, the Spring crop planted in December-January-February and lifted in April/May, and a Summer crop (irrigated) planted in March/April and lifted in July. The principal and most important crop is the spring crop which is grown from seed imported mainly from Northern Ireland and in smaller quantities from England, Scotland, the Irish Free State and the Netherlands. Potatoes are now the principal cash crop, as the bulk of the two main crops is exported.

Winter potatoes (both early and main crop) were grown on an area of 2,596 acres, as against last year's 3,009 acres. The yield was estimated at 4,081 tons, while the corresponding yield for last year was returned at 9,333 tons. However poor, the crop was healthy and generally free from blight. The irrigated or early crop was behind the average owing to the high winds blowing during the third week of November which parched the haulms during active growth. The maincrop sprouted late in November, as there was no useful rain before the 14th of that month. The plants suffered a heavy check during their early growth owing first to a spell of dry weather and then to the storms which prevailed between November and December. The yield was very small—from 5 to 6 qantars per tumolo (1) (1.6 tons per acre), but the tubers were generally free from blight.

Th area under the spring crop amounted to 4,072 acres, all grown from imported seed. Over 40,000 bags equal to 80,000 cwts. of seed potatoes were imported last year, but as seed potatoes pay no duty and for various reasons were selling lower than table potatoes, it is estimated that about 5,000 bags were used for direct consumption. The varieties sown were mainly Champion, Up-to-date and Invincible, but small quantities

(1) 1 acre=3.75 tummoli.

of other kidney varieties were also planted. Owing to keen competition between the importers, prices of seed potatoes were exceptionally low, while the seed was exceptionally sound and healthy. The quality of the seed coupled with ideal weather conditions helped to produce a record crop both as to yield and soundness of tubers. The whole spring crop was estimated at 20,000 tons, of which about 10,800 tons were exported, mainly to the Netherlands.

Summer potatoes were planted on an area of 500 acres, cropping about 2,250 tons. This crop is planted at the close of February and in March and sometimes in April. The earlier plantings are generally rain crops, while the later are irrigated. The summer crop is sown from locally saved seed and the whole of it is consumed locally.

Appendix VII shows quantities of seed potatoes imported in the year under review together with varieties and countries of origin.

Onions. Onions were grown on 1,289 acres, as against 1,394 acres for the previous year. The decrease is due to last year's low prices. The production was estimated at 7,749 tons while the figure for the preceding year was 9,442 tons. The crop was healthy and the yield satisfactory, owing to the frequent spring showers which permitted the bulbs to develop fully. However, prices were again very low, and it is difficult to secure better market, unless the farmers are persuaded to introduce the flat brown, peg or top-shaped variety, which is preferred by the importing countries.

Tomatoes 1933. Tomatoes were cultivated on an area of 375 acres with an estimated production of 60,770 cwts. as against 287 acres and a production of 22,006 cwts. in the previous year. The late rains in June and July account for this year's record crop. Prices were very low and remained stationary for the whole season between 1d and 2d per pesa (8¾lbs.).

Tomatoes 1934. The area under tomatoes for this year was 346 acres with a production of 41,470 cwts. Almost all the tomato crop is dry-farmed. Prices, varying between 2½d and 4d per pesa, were far superior to those of last year. San Marzano tomatoes which were cultivated this year for the first time on a commercial scale were selling for 4d per pesa throughout the whole season. These enhanced prices were due to the opening of a fourth big cannery in May last which greatly increased competition.

Melons. In 1933, musk—and watermelons were dry farmed on 385 acres (274 acres in Gozo) as against 620 acres for the previous summer. The production was estimated at 43,253 cwts. as against 32,156 cwts. in the preceding year.

In 1934 melons were cultivated on an area of 413 acres. Production amounted to 27,633 cwts. The crop was heavily attacked by aphides, owing to the damp scirocco weather in June and July.

Vegetables. Other vegetables were grown on an area of 3,200 acres as against 3,045 acres in 1932-33. The production of vegetables was estimated at 423,146 cwts. as compared with 221,119 cwts. last year. Prices during the year were very low. Great quantities of late Maltese Giant cauliflower and broccoli which might have been turned to better advantage by canning or brining were fed to cattle at 6d. and 4d. per sack of 20 heads.

Forage Crops. The area under forage crops (exclusive of dry vetches) was 8,818, much below last year's 12,348 acres and the average of the last quinquennium of 12,264 acres. These last two figures include vetches (about 2,000 acres). The decrease is due to the failure of sulla on hillside and heavy soils, especially in Gozo, consisting mostly of clayey and hilly lands on which sulla died out, after germination, owing to the autumn drought. The forage yield was estimated at 439,488 "some" or loads of 10 bundles each. The principal forage crops were: sulla, 5,602 acres with a crop of 264,708 loads; barley grass 1,522 acres with a crop of 98,930 loads; caterpillar plant 1,694 acres with a crop of 75,850 loads. Seven strains of Lucerne were cultivated for the first time with great success at the Hammieri

Experimental Farm, and an Australian strain by a returned emigrant in Gozo. Germination was late in all forage crops owing to dry weather in October and the first half of November.

Cumin. Cumin was sown on an area of 1,712 acres as against 1,095 acres in the preceding year. The crop of seed was estimated at 9,557 cwts. which compared very favourably with last year's crop of 4,991 cwts. The increase in the area under cumin was brought by better prices ruling in the previous fall and winter. The meteorological conditions prevailing in April and May were ideal for the growth of cumin, with the results that seeds came heavy and plump. Cumin is a cash crop sometimes second only in importance to potatoes, and produced wholly for export. Prices varied between £1. 12. and £2. 4. 9. per cwt.

Cotton 1933. The cultivation of cotton has been diminishing from year to year since the War. The returns for this year show an acreage of only 63 acres under cotton with a production of 12,469 lbs. of lint, and twice the same weight of seed. The corresponding figures for the last year were sixty-six acres and 16,325 lbs. of lint. Long ago cotton was the main cash crop of the Islands and the duty on the export of raw cotton made up half the revenue of Malta under the Spanish rule and the Knights.

Cotton 1934. In this year this crop was cultivated on an area of 82 acres, with a production of 17,895 lbs. of lint. The small increase was due to a slight movement in prices which reached 3/4d per pesa.

Grapes. The returns for this year give 1,329 acres of vineyard, of which 820 acres in Gozo. Although the area under vines is increasing every year this figure is lower than that in previous reports which appears somewhat exaggerated. The grape crop was estimated at 67,445 cwts., producing normally 53,959 barili of wine (512,600 Imperial gallons). But at least an equal quantity of second wines (illegal) was also produced.

Citrus Fruits. The area under citrus trees is estimated at 193 acres as against 189 acres for last year. The slight increase consists of orchards annexed to newly built villas. The crop for the year under review was estimated at 194,830 doz. as against last years yield of 148,090 doz. However, almost all the mandarines and between 30 and 40 per cent of this year's oranges were damaged by attacks of the Mediterranean Fruit Fly (*Ceratitis capitata*, Wied), which this year, favoured with the long autumn drought, has succeeded in working immense harm not only in the orange groves but in practically all kinds of deciduous orchards.

Next year it is proposed to start a large scale campaign against this pest.

Other Fruits. Other fruit trees are planted on an estimated area 1,452 acres as against, 1,563 acres in the previous year. They consist chiefly of prickly pears, carobs, olives, stone fruits and apples. The once ubiquitous fig-tree is annually making room for prickly pears and vines. The prickly pear joints as well as its fruits afford the principal succulent feeding stuff, much appreciated by ruminants and swine, during the long summer and autumn, when the country is parched and no other green feeds are available.

Appendices VIII, IX, X and XI show respectively the area under cultivation, production, value of agricultural produce, and average prices.

3. Animals.

Enumeration of live stock and farm animals is made annually on the 31st December in terms of Government Notice No. 194 of the 15th July, 1921 as amended by Government Notice No. 118 of the 25th of May 1933. These returns are not very reliable, as farmers and breeders have only to report the animals to the District Police; the Police insist that the report is made, but there is no control as to accuracy. A Draft Ordinance to facilitate the collection and compilation of more dependable statistics submitted by this Department during the year has now been enacted. The following is an attempt to describe the general position of animal husbandry in these Islands.

From the enumeration carried out in January 1934, Appendix XII it appears that the animals existing in both Islands on the 31st of December 1933, were as follows : cattle 3,912 head, pigs 5,515, sheep 19,622, goats 28,408, horses 3,051, donkeys 4,196, mules 3,092.

Cattle. Of the 3,912 head of cattle, 2,297 were returned as of "Maltese" breed, and 1,615 as "foreign". The figures for the previous year were : Maltese 2,467, and Foreign 1,662. These denominations are misleading. The word "Maltese" includes all cattle born and bred in Malta whether they are dairy cows or service bulls or stores fed for fattening; while the word "Foreign" includes only steers imported in a lean condition and fattened locally for beef. Under the circumstances it is impossible to state the exact number of dairy cows and breeding bulls or of cattle meant for slaughter. Statistics collected by the Police in March 1934, at the request of this Department, have given 383 dairy cows of which fully 310 are in Gozo, and 41 service bulls, of which only 17 are in Gozo. These figures are on the face of them too low and unreliable.

Maltese cows are of two kinds. The pure Maltese breed is a bony animal kept mainly for ploughing and threshing. Of the dairy cow, some specimens are descendants of Short horns and Frisians, the rest being a heterogeneous mixture of crosses. There are also eleven pure Kerries (10 cows and a bull).

The milk yield of the pure Maltese cow is low, ranging between 1,000 and 2,500 litres. The milk yield of the crosses averages between 2,000 and 4,000 litres. The lactation period of both types lasts about 9 months. Cows' and Sheep's milk is generally mixed and made into "Sicilian cheese", or into the well-known Gozo Cheeselets (weighing not more than $2\frac{1}{2}$ oz. each). Dairies in Malta in the neighbourhood of the towns sell all their milk for direct consumption in aluminium cans or glass bottles. Two of these dairies, keeping between them about 100 cows, have erected small pasteurizing plants, and all the milk they sell is pasteurized and marketed in standard bottles for direct consumption.

Maltese cattle, in addition to being poor milkers, yield inferior beef. Over 80 % of the beef consumed in the Islands is obtained from store bullocks imported from Turkey, Yugo-slavia, Bulgaria, Hungary, Greece, Tunis and Roumania, and fattened locally on concentrated feeding stuffs.

The number of bullocks so imported in 1933 was 17,692. The slaghterings during the year amounted to 17,499 head, of which 1,005 were home bred, and 16,494 foreign. Of the number imported only 3,104 were fat, ready for slaughter, the remaining 14,588 head being stores, requiring at least three months local fattening. This old practice of the local fattening of imported steers was revived by Act No. XXXIX of the 26th of June 1933. I make no apology for quoting one paragraph from my predecessor's annual report for the year 1932-33.

" To the many disadvantages against which our animal husbandry has been " waging an uneven war, another was added quite recently, viz : the importation of " cattle ready fattened for slaughter, instead of the time-honoured practice of " importing store animals to be fattened in the cowsheds by the farmers, which " practice, besides providing meat of a superior quality, and greatly benefiting the " farmers, stimulating the import trade in food-stuffs for animals, favoured a more " intensive local cultivation of food-stuffs, and provided a constant supply of cow- " shed manure of the best quality for keeping up the fertility of the soil. It is " expected that before long adequate steps will be taken to checkmate this new " danger to our agriculture ".

Pigs. The number of pigs returned was 5,515 as against 4,336 for the previous year. Like all the other returns for livestock this is hardly one-third of the pig population of the Islands. The number of pigs slaughtered in the Civil Abattoirs amounted to 21,433 of which only 2,509 were imported. At least half of the locally bred swine were at all times on the Farm, besides breeding sows (about 1,500) and service boars (about 100), which brings the number to 11,064.

Sheep. The number of sheep was 19,622, of which fully 8,474 were in Gozo. Sheep in Malta are bred mainly for their milk, which is made into small cheeses (called Gozo cheese) and consumed fresh or after six or more months seasoning with salt and vinegar.

Goats. The number of goats reported was 28,408; but the real goat population is not less than twice that figure. The keeping of goats for the sale of fresh milk is regulated by a set of particularly severe sanitary regulations and goat keepers are always ready to represent the number of goats kept in any one goatshed as lower than it actually is. The goat is an animal of national importance in Malta since it is almost the only source of supply of fresh milk.

Draught Animals The number of horses, mules and donkeys for the year were respectively 3,051, 3,092, 4,196 as against 3,214, 3,044, and 4,229 for the previous year. The number of draught animals is gradually decreasing every year owing to the yearly increasing volume of motor transport.

4. Exports of Agricultural Produce.

The total yearly value of our field and farm produce amounts to about £1,220,000, consisting chiefly of potatoes, grapes, fruits and vegetables, forages, meat, dairy produce and dressed poultry of which only an average value of £160,000 is exported. This value represents nearly 80% of all exports. Agricultural exports this year were valued only £111,290 or 78% of total exports. Comparative values of agricultural and other exports for the last six years are shown in graphic form in Appendix XIII.

The principal agricultural exports for the year under review were as follows:—

Potatoes. The quantities exported were 10,170 tons, valued £79,368 as compared with 10,425 tons and £105,054 for the previous year. Of these quantities over 70% went to Holland and the rest to Germany, the United Kingdom, Italy, Tunis, Belgium and other countries.

Potatoes are the main cash crop and constitute the chief agricultural produce for export. Holland remains our oldest and most important market for this produce but attempts are being made to work up a market for our potatoes in England and Ceylon.

Onions. The quantities exported amounted to 23,837 cwts. valued £2,360 as compared with 68,294 cwts. and £14,455 for the previous year. Ruling prices were very low—barely 2s/- per cwt. Of the quantities exported 63.6% went to Holland, and the rest mainly to Tunis and the United Kingdom. During the year under review no onions were exported to Italy, which up to the last year used to be our second customer for the export of this produce. Owing to low prices great quantities remained in the Island unsold.

Cumin Seed. The exports of cumin seed during the year amounted to 5,228 cwts. valued at £7,757, as against 6,639 cwts. valued at £7,797 in the previous year. Prices were somewhat better than those of the preceding year, but they were still 50% lower than the average price for the previous quinquennium. Cumin Seed has gone to 15 different countries scattered all over the World, but the principal importing countries are, in order of importance, the Netherlands, which usually takes 50% of the whole crop, Germany, France, Egypt, Chile, Italy, Argentine, U.S.A., the United Kingdom and Norway. It is a fact not commonly known that all the cumin shipped to Holland is subjected to a new screening and reshipped to Scandinavia, Finland and South America for greatly enhanced prices. Efforts are being made to capture markets in the consuming countries directly.

Cotton. No cotton was exported during the years 1930, 1931 and 1932, but during the year under review 497 cwts. of lint valued £1,056 were exported, mainly to Italy and Greece.

Citrus. The export of oranges and mandarines amounted to 6,492 doz. worth £234, which is 30% below the average fo the last five years. Maltese oranges are almost exclusively taken by the United Kingdom.

Elaterium and Squills, have ceased to figure on our export list. Not more than 20 cwts. valued £20 of Squills were exported, all to the United Kingdom. Up to 30 years ago these products were exported, in great quantities to Germany and the United Kingdom. Elaterium was cultivated in the fields, but the squill grows wild anywhere on our rocks and Malta could ship about 100,000 cwts. of squills per annum. Enquiries are being made whether the British Pharmacopoea has still any use for squills and elatherine.

Bran. Shipments of bran amounting to 13,369 cwts. and valued at £2,909 were sent to the United Kingdom, Lybia and France. By Ordinance No. XVIII of 1934 an export duty of 20% *ad valorem* has been put on bran, on behalf of local stock-feeding.

Hides and Skins. The export of hides and skins is one of the most important, second only to the export of potatoes. The quantities shipped during the year totalled 7,904 cwts. valued £13,410. The bulk of these exports goes to Italy and Greece, but other steady customers are France, Turkey, the United Kingdom and Belgium. Lybia is a new market. The prices fetched are inferior to those paid for supplies from other European countries, and the question of establishing a tannery on modern lines is submitted for consideration. The annual output reaches over 18,000 hides, that is about 17,600 cattle and 400 equines, and about 34,500 skins, namely 6,500 goats, 6,000 sheep, and 22,000 lambs and kids, besides skins of other animals. On the other hand leather imports average £25,000 per annum, while leather manufactures (besides boots and shoes) reach another mean of £8,000.

Tallow. Tallow exports, going chiefly to Italy, amounted to 2,300 cwts valued £2,845.

Other Exports. included 4,491 cwts. of bones and hoofs valued £968 and insignificant quantities of beans, wine, tar, vegetables, tomato paste and cheese.

Agricultural exports for the years 1928-33 are tabulated in Appendix XIV.

APPENDIX VI.

Table showing the monthly and total rainfall (in inches) for the year 1933-34 as compared with 1932-33. *

Town or village	Sept 1933	Oct. 1933	Nov. 1933	Dec. 1933	Jan. 1934	Feb. 1934	March 1934	April 1934	May 1934	June 1934	Total Sept.-June 1933-34	Total Sept.-June 1932-33
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
MALTA												
Mqabba	—	0·15	5·32	6·84	6·51	1·64	2·18	0·63	1·60	—	24·87	26·42
Mosta	—	0·23	5·32	4·45	6·40	1·44	2·21	0·42	1·25	0·08	21·80	27·27
Żurrieq	—	—	2·79	7·24	6·09	1·43	2·01	0·74	0·88	—	21·18	24·31
Qrendi	0·08	0·03	4·07	5·54	6·25	1·21	1·98	0·55	1·05	0·04	20·80	24·57
Qormi	—	0·23	4·14	4·40	6·02	1·00	2·05	0·39	2·07	—	20·30	22·61
Naxxar	0·12	0·25	3·92	5·07	5·79	1·31	1·73	0·58	1·24	0·08	20·09	26·13
Luqa	0·16	0·22	3·34	5·41	5·07	1·39	1·96	0·53	1·77	0·04	19·89	22·61
Vittoriosa	0·07	0·28	3·70	6·13	5·52	0·87	2·16	0·30	0·80	—	19·83	23·68
Għaxaq	0·10	0·24	4·25	5·53	5·53	1·08	1·88	0·38	0·66	—	19·65	19·78
Lija	—	—	3·80	5·11	5·26	1·50	2·01	0·47	1·54	—	19·69	26·36
Msida	0·02	0·31	3·93	4·91	5·35	1·17	1·18	0·92	1·72	0·01	19·52	22·48
Tarxien	0·02	0·33	3·56	5·39	5·69	1·42	1·69	0·35	0·93	0·01	19·39	22·16
Gudja	—	0·22	1·60	7·37	6·21	0·32	1·75	1·30	0·58	—	19·35	21·88
Żejtun	—	—	2·82	6·47	5·38	1·53	1·71	0·45	0·74	—	19·10	20·81
Notabile	—	—	3·84	4·07	6·36	1·32	1·62	0·58	1·22	0·05	19·06	29·96
Żebbuġ	0·08	0·32	4·07	4·35	5·05	1·20	1·80	0·50	1·62	0·03	19·02	25·38
Floriana	0·10	0·23	4·06	4·40	5·28	1·82	1·73	0·31	0·97	0·01	18·91	24·79
Siġġiewi	0·09	0·22	3·45	4·40	5·71	1·09	2·16	0·51	0·76	—	18·39	26·28
Birkirkara	0·04	0·12	4·43	3·86	6·09	0·98	1·71	0·35	0·78	—	18·36	24·53
Valletta	0·09	0·24	2·18	6·14	5·21	1·39	1·88	0·29	0·55	0·03	18·00	23·10
Għargħur	0·06	0·19	4·07	4·20	5·43	1·10	1·48	0·42	0·86	0·14	17·95	21·91
Sliema	0·08	0·29	3·65	3·85	5·65	1·30	2·27	0·34	0·30	0·04	17·77	26·33
St. Paul's Bay	0·08	0·14	4·14	3·61	5·93	0·93	1·32	0·37	0·75	0·40	17·67	20·55
Cospicua	—	0·36	2·11	5·77	5·18	1·26	1·74	0·30	0·51	—	17·23	25·31
Mellieħa	—	0·17	4·62	3·48	4·48	1·27	1·41	0·49	1·12	0·19	17·23	22·12
Birżebbuġa	—	—	4·53	4·87	4·45	0·45	0·95	0·85	0·30	—	16·40	16·82
Hamrun	0·02	0·13	3·54	3·64	4·81	0·93	1·43	0·29	0·60	0·02	15·41	19·74
Senglea	—	0·23	2·95	4·28	4·17	0·72	1·34	0·27	0·63	—	14·57	21·72
Dingli	—	—	3·93	2·88	4·48	—	1·23	0·62	0·92	—	14·06	25·62
Mean	0·04	0·17	3·72	4·95	5·49	1·14	1·74	0·49	0·99	0·04	18·81	—
Corresponding mean last year ...	1·12	5·11	4·89	1·88	6·83	2·85	0·22	0·05	0·37	0·45	—	23·62
GOZO												
Sannat	—	0·51	13·43	2·32	5·43	1·33	2·41	0·89	0·87	0·81	28·00	25·77
Żebbuġ	0·10	0·10	9·54	3·69	5·63	1·26	1·75	1·12	0·28	1·31	24·78	28·40
Xewkija	0·14	0·12	8·32	2·79	5·70	1·52	2·42	1·29	0·64	0·60	23·54	31·68
Victoria	0·24	0·20	10·24	2·01	4·47	1·36	1·76	1·01	0·49	0·74	22·52	21·07
Xagħra	—	0·45	7·98	2·97	4·81	1·49	1·95	1·03	0·77	0·75	22·20	29·63
Għarb	0·13	0·22	10·21	2·63	4·29	0·66	1·33	0·75	0·21	0·94	21·37	20·94
Għajnsielem	0·22	0·52	5·98	2·71	5·19	1·47	2·07	0·65	0·36	0·78	19·95	27·38
Nadur	0·10	0·13	4·88	2·33	4·90	1·55	2·05	0·52	0·46	0·57	17·49	23·72
Qala...	0·08	0·12	4·51	2·84	4·78	1·43	2·08	0·47	0·24	0·40	16·95	25·96
Comino	0·18	0·25	3·20	2·30	4·15	1·40	1·10	0·50	—	1·20	14·27	21·17
Mean	0·11	0·26	7·82	2·55	4·93	1·34	1·89	0·82	0·43	0·81	21·10	—
Corresponding mean last year ...	3·10	3·72	5·92	1·87	6·94	2·97	0·22	0·10	0·40	0·30	—	25·57
Mean for Malta, Gozo and Comino	0·06	0·19	4·78	4·35	5·35	1·19	1·78	0·58	0·84	0·23	19·39	—
Corresponding mean last year ...	1·63	4·75	5·15	1·73	6·86	2·88	0·22	0·06	0·38	0·41	—	24·12

* Recompiled, from records taken by the Elementary Schools.

APPENDIX VII.

Seed potatoes imported during the year 1933-34.

Date of importation	Country of origin	Variety and Number of Bags									Total
		Champion	Invincible	Up to-date	Royal Kidney	Majestic	Arran Banner	Long Alpha	Sharpe's Express	Other Varieties	Bags 2 cwts. each
28.11.33	England ...	...	...	...	101	...	...	...	...	...	101
2.12.33	Northern Ireland	450	1,600	110	...	...	...	...	...	..	2,160
11.12.33	do.	1,755	1,750	500	...	...	...	...	...	...	4,005
12.12.33	do.	..	100	...	...	...	...	...	...	...	100
17.12.33	do.	3,000	569	450	...	...	...	...	...	...	4,019
24.12.33	do.	1,650	...	300	...	...	...	...	...	...	1,950
27.12.33	do.	1,440	...	500	...	...	...	...	...	...	1,940
29.12.33	Scotland ...	...	...	...	...	...	...	...	...	½	½
1. 1.34	Northern Ireland	2,801	...	650	...	...	...	...	...	...	3,451
5. 1.34	do.	850	...	...	...	...	...	...	...	...	850
9. 1.34	do.	1,750	...	300	...	...	...	...	...	...	2,050
12. 1.34	do.	2,650	...	400	...	...	...	...	...	...	3,050
16. 1.34	do.	1,850	..	450	...	...	...	...	...	...	2,300
17. 1.34	England ...	...	...	...	...	...	...	...	...	3	3
27. 1.34	Northern Ireland	5,600	...	650	...	...	...	...	...	...	6,250
30. 1.34	do.	2,610	...	50	...	...	...	...	...	...	2,660
1. 2.34	England ...	...	...	...	...	...	...	...	5	...	5
1. 2.34	do. ...	...	...	...	...	6	...	...	...	...	6
2. 2.34	Northern Ireland	840	...	150	...	...	...	...	...	...	990
8. 2.34	do.	1,850	...	200	...	...	...	...	...	...	2,050
8. 2.34	Scotland ...	...	...	...	...	...	150	...	...	...	150
13. 2.34	Northern Ireland	100	...	...	...	...	...	...	...	...	100
26. 2.34	Holland... ...	...	...	...	...	...	...	* 125	...	1	126
27. 2.34	Northern Ireland	1,570	...	130	...	...	...	...	...	...	1,700
27. 2.34	Irish Free State	...	...	...	...	...	5	...	...	...	5
27. 2.34	do.	...	...	5	...	...	...	...	...	5	10
	Total ...	30,766	4,019	4,845	101	6	155	125	5	9½	40,031½

* Approximately.

APPENDIX VIII.

Area of the various crops 1933-34.

	Locality	Nature of the crop and number of acres of land in each crop.															
		Wheat	Barley	Beans	Vetches	Potatoes	Onions	Cumin	Citrus fruits	Vines	Other fruits	Vegetables	Cotton	Forages	Pasture	Total No. of acres in crop	No. of acres of uncultivated land
Valletta Dist.	Valletta	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Floriana	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Hamrun & Marsa ...	51	26	13	18	24	4	14	3	—	7	19	2	72	2	255	26
	Msida & Pietà ...	39	11	2	7	32	1	6	2	—	3	4	—	33	1	141	3
	Sliema	25	4	1	3	17	—	2	1	—	1	7	—	17	1	79	2
	St. Julians	62	15	4	17	42	1	4	2	1	7	10	—	56	2	223	10
Total Valletta District ...		177	56	20	45	115	6	26	8	1	18	40	2	178	6	698	41
East District	Senglea	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Cospicua	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Vittoriosa	—	2	1	2	3	1	1	—	—	2	3	—	4	—	19	3
	Żabbar & Kalkara ...	129	167	124	106	138	76	25	3	3	26	215	2	312	23	1,349	49
	Żejtun	172	183	130	98	144	93	72	2	2	13	95	—	304	11	1,319	20
	Marsaxlokk	137	115	25	23	88	76	54	—	3	14	15	—	170	14	734	24
	Tarxien & Pawla ...	122	100	60	13	107	63	74	3	12	20	20	1	183	3	781	12
	Luqa	133	70	75	15	72	100	45	4	4	36	48	1	251	4	858	24
	Mqabba	137	85	3	13	61	12	3	2	5	60	—	—	127	8	516	18
	Qrendi	191	109	10	22	74	18	14	2	3	43	—	—	190	20	696	90
	Żurrieq & Safi ...	510	448	23	43	169	57	22	5	10	45	—	2	437	32	1,803	69
	Gudja & Kirkop ...	135	79	58	16	105	59	81	2	5	27	20	1	299	18	905	42
	Birżebbuġa	195	202	43	29	198	137	106	1	15	37	21	1	263	46	1,294	80
	Axaq	90	130	19	13	115	86	63	1	2	13	17	1	171	10	733	48
Total East District ...		1,951	1,690	571	393	1,274	778	560	25	64	336	454	9	2,711	189	11,005	479
Central District	Naxxar Central ...	343	115	8	67	195	4	94	3	4	38	20	1	242	20	1,154	400
	Birkirkara and Sta. Venera	198	74	53	32	500	35	31	7	5	41	86	—	217	13	1,292	54
	Għargħur	200	71	9	41	112	4	43	1	4	31	34	—	178	22	750	240
	Mosta	127	28	4	20	97	3	35	10	5	24	31	2	142	19	547	75
	Lija & Balzan... ...	64	10	11	11	73	5	17	30	2	18	108	—	109	—	458	5
	Attard	206	67	16	14	76	1	20	17	10	10	125	—	304	2	868	24
	Żebbuġ...	186	72	53	90	154	52	127	12	11	36	198	2	302	6	1,301	21
	Qormi	182	101	51	71	116	26	47	10	5	45	334	—	299	14	1,301	18
Total Central District ...		1,506	538	205	346	1,323	130	414	90	46	243	936	5	1,793	96	7,671	837
West District	Notabile	420	22	53	108	42	13	23	1	36	36	110	—	213	10	1,087	6
	Rabat	870	88	167	262	186	102	33	6	138	172	365	—	462	20	2,871	343
	Dingli	230	40	58	116	60	41	4	2	42	47	155	—	146	23	964	210
	Siġġiewi	494	138	125	254	168	142	190	40	25	46	285	2	515	66	2,490	292
	Mġarr	634	254	36	183	287	28	157	1	55	95	36	1	424	98	2,289	172
	Mellieħa	686	40	115	350	108	16	6	2	65	69	315	—	312	43	2,127	216
	St. Paul's Bay ...	556	48	76	46	227	9	18	2	30	32	270	—	471	28	1,813	115
	Naxxar, West... ...	165	56	6	27	69	1	26	1	7	30	3	1	125	10	527	347
Total West District ...		4,055	686	636	1,346	1,147	352	457	55	398	527	1,539	4	2,668	298	14,168	1,701
Total Malta		7,689	2,970	1,432	2,130	3,859	1,266	1457	178	509	1,124	2,969	20	7,350	589	33,542	3,058
Gozo	Victoria (Gran Fontana)	163	179	36	57	46	1	20	1	100	28	49	3	86	6	775	24
	Qirċem	170	240	40	70	36	—	8	1	66	20	20	2	121	18	812	37
	San Lawrenz	133	168	23	17	15	—	7	—	18	8	8	11	66	11	505	27
	Għarb & Għasri ...	171	291	42	67	54	2	26	—	36	20	35	16	159	16	935	106
	Żebbuġ...	178	250	56	46	12	1	1	2	68	55	6	4	170	12	861	25
	Xagħra...	174	210	49	74	6	—	1	6	117	45	32	3	202	32	951	38
	Nadur	155	182	43	90	2	—	—	4	203	50	46	—	130	45	950	56
	Qala	152	140	45	36	8	—	—	—	134	52	18	—	100	8	693	30
	Għajnsielem & Kemmuna	123	115	33	32	5	2	10	1	32	23	10	1	92	40	519	76
	Xewkija	73	80	21	29	16	11	22	—	29	9	2	—	103	45	440	80
	Sannat & Munxar ...	148	164	37	34	13	6	160	—	17	18	5	3	239	98	942	94
Total, Gozo...		1,640	2,019	425	572	213	23	255	15	820	328	231	43	1,468	331	8,383	593
Grand total		9,329	4,989	1,857	2,702	4,072	1,289	1712	193	1329	1,452	3,200	63	8,818	920	41,925	3,651

APPENDIX IX.

Estimated Quantities of Agricultural Produce—1933-34.

	Locality	Nature of produce and quantity of each												
		Wheat Quarters	Barley Quarters	Beans Quarters	Vetches-seed Quarters	Potatoes Tons	Onions Tons	Cumin-seed Cwts	Citrus fruits Dozen	Grapes Cwts.	Other fruits Cwts.	Vegetables Cwts.	Cotton Lint Lbs.	Forages 'Soma' or load of 10 bundles
Valletta Dist.	Valletta	—	—	—	—	—	—	—	—	—	—	—	—	—
	Floriana	—	—	—	—	—	—	—	—	...	—	—	—	—
	Hamrun & Marsa	229	150	81	61	120	25	59	2,700	—	420	2,394	126	3,758
	Msida & Pietà	152	63	12	24	160	6	25	1,800	—	180	504	—	1,138
	Sliema	98	21	6	9	85	—	8	900	—	60	882	—	431
	St. Julians	253	86	24	58	210	6	25	1,780	31	430	1,260	—	1,536
Total Valletta District		732	320	123	152	575	37	117	7,180	31	1,090	5,040	126	6,863
East District	Senglea	—	—	—	—	—	—	—	—	—	—	—	—	—
	Cospicua	—	—	—	—	—	—	—	—	—	—	—	—	—
	Vittoriosa	—	11	6	6	13	6	5	—	—	120	360	—	183
	Żabbar & Kalkara	475	960	744	339	674	456	125	2,850	93	1,560	26,875	236	15,898
	Żejtun	551	1,052	756	314	720	558	360	1,900	62	780	11,400	—	14,855
	Marsaxlokk	497	661	143	74	336	459	276	—	94	840	1,800	—	8,422
	Tarxien & Pawla	440	575	355	42	535	381	407	2,820	372	1,200	2,500	158	9,715
	Luqa	479	408	450	48	324	600	189	7,600	124	2,100	5,760	230	13,120
	Mqabba	493	489	16	42	274	36	15	1,900	155	3,600	—	—	6,094
	Qrendi	688	637	62	71	335	108	72	1,980	92	2,580	—	—	9,054
	Żurrieq & Safi	1,886	2,596	140	138	760	352	118	4,750	310	2,700	—	315	20,904
	Gudja & Kircop	486	474	348	51	472	364	401	1,910	155	1,620	2,400	160	15,815
	Birżebbuġa	624	1,172	260	93	990	835	534	950	465	2,220	2,520	165	12,959
	Għaxaq	325	750	115	42	517	516	347	2,850	63	780	2,040	160	7,320
Total East District		6,894	9,785	3,395	1,250	6,010	4,671	2,849	29,510	1,985	20,160	55,655	1,424	134,389
Central District	Naxxar Central	1,395	670	48	235	975	24	574	2,880	124	2,280	2,520	160	12,354
	Birkirkara and Santa Vennera	800	435	320	104	2,500	215	191	6,720	155	2,460	10,836	—	11,256
	Għargħur	835	426	55	143	560	24	258	960	126	1,830	4,250	—	8,876
	Mosta	521	172	26	72	485	18	215	9,600	158	1,440	3,906	240	7,209
	Lija & Balzan	272	58	67	39	365	31	106	29,400	62	1,080	13,608	—	5,180
	Attard	844	434	100	51	380	6	120	16,660	310	650	15,750	—	15,511
	Żebbuġ	762	453	365	320	770	312	772	11,760	341	2,160	24,943	393	16,302
	Qormi	738	636	354	252	580	156	287	9,700	155	2,700	43,420	—	15,907
Total Central District		6,167	3,284	1,335	1,216	6,615	786	2,523	87,680	1,431	14,630	119,238	793	92,595
West District	Mdina	1,870	139	320	382	210	78	144	950	1,116	2,175	13,860	—	10,865
	Rabat	3,855	564	998	923	930	616	206	5,700	4,278	10,320	47,450	—	24,577
	Dingli	1,013	262	342	406	300	247	24	1,900	1,302	2,820	19,530	—	7,603
	Siġġiewi	1,996	877	800	895	840	862	1,170	39,200	775	2,760	37,050	315	24,868
	Mġarr	2,803	1,644	225	644	1,435	168	962	940	1,705	5,700	4,536	191	22,252
	Melleħa	3,017	275	725	1,129	540	96	31	1,880	2,015	4,140	40,950	—	15,473
	St. Paul's Bay	2,492	336	470	163	1,135	54	90	1,900	930	1,920	35,100	—	22,839
	Naxxar, West	724	372	36	95	345	6	138	950	217	1,800	15,625	160	6,171
Total West District		17,770	4,469	3,916	4,637	5,735	2,127	2,765	53,420	12,338	31,635	214,101	666	134,648
Total Malta		31,563	17,858	8,769	7,255	18,935	7,621	8,254	177,790	15,785	67,515	394,034	3,009	368,445
Gozo	Victoria (Gran Fontana)	723	949	196	182	230	5	102	950	6,300	1,820	6,174	660	4,102
	Kerċem	745	1,277	218	224	180	—	41	940	4,158	1,300	2,520	440	5,753
	San Lawrenz	583	887	126	118	75	—	35	—	1,134	520	1,008	2,420	3,131
	Għarb & Għasri	765	1,545	231	214	270	12	136	—	2,268	1,350	4,410	3,520	7,488
	Żebbuġ	797	1,338	300	147	60	5	5	1,870	4,284	3,575	756	880	8,324
	Xagħra	778	1,112	269	237	30	—	5	8,550	7,371	2,925	4,032	660	9,939
	Nadur	686	964	233	288	10	—	—	3,800	12,789	3,250	5,796	—	6,451
	Qala	662	754	244	115	40	—	—	—	8,442	3,380	2,268	—	5,030
	Għajnsielem & Kemuna	533	616	182	102	25	13	50	930	2,016	1,495	1,260	110	4,492
	Xewkija	314	427	115	93	80	65	111	—	1,827	585	258	110	4,745
	Sannat & Munxar	651	883	201	109	65	28	818	—	1 071	1,170	630	660	11,588
Total, Gozo		7,237	10,752	2,315	1,829	1,065	128	1,303	17,040	51,660	213,70	29,112	9,460	71,043
Grand total		38,800	28,610	11,084	9,084	20,000	7,749	9,557	194,830	67,445	88,885	423,146	12,469	439,488

APPENDIX X.

Estimated values of Agricultural Produce grown in these Islands during 1932-33 and 1933-34.

	1932-1933									1933-1934								
				£	s.	d.		£	s.	d.				£	s.	d.		£	s.	d.
Wheat	38,083	qrs.	@	2	0	0	=	76,164	0	0	38,800	qrs.	@	1	16	8	=	71,133	6	8
Meslin or "Mischiato"	10,738	,,	,,	1	3	4	=	12,527	13	4	9,057	,,	,,	1	6	8	=	12,876	0	0
Barley	18,997	,,	,,		18	4	=	17,413	18	4	18,953	,,	,,		18	4	=	17,373	11	8
Straw (Wheat and Meslin) ...	300,000	nets	,,		3	8	=	55,000	0	0	335,840	nets	,,		2	6	=	41,980	0	0
Straw (Barley)	142,000	"some"	,,		1	0	=	7,100	0	0	538,812	"some"	,,			10	=	22,450	10	0
Beans	8,868	qrs.	,,	1	11	8	=	14,041	0	0	11,084	qrs.	,,	1	15	0	=	19,597	0	0
Vetches	—	—	--		—			-			9,084	,,	,,	1	16	8	=	16,654	0	0
Potatoes (Winter)	9,333	tons	,,	2	17	6	=	26,832	7	6	4,081	tons	,,	1	5	4	=	17,412	5	4
Potatoes (Spring)	10,822	,,	,,	9	0	0	=	97,398	0	0	20,000	,,	,,	6	8	0	=	128,000	0	0
Potatoes (Summer)	—	—	—		—			--			2,250	,,	,,	4	16	0	=	10,800	0	0
Onions	9,442	,,	,,		10	0	=	4,721	0	0	7,749	,,	,,		10	8	=	4,132	16	0
Cumin	4,991	cwts.	,,	1	8	0	=	6,987	8	0	9,557	cwts.	,,	2	0	0	=	19,114	0	0
Citrus fruits	148,090	dozen	,,			4	=	2,468	3	4	194,830	dozen	,,			6	=	4,870	15	0
Grapes	151,550	cwts.	,,		8	6	=	64,408	15	0	67,445	cwts.	,,		7	9	=	26,134	18	9
Other fruits	71,799	,,	,,		8	6	=	30,514	11	6	88,885	,,	,,		6	6	=	28,887	12	6
Cotton lint	16,325	lbs.	,,			4	=	272	1	8	17,895	lbs.	,,			5	=	372	16	3
Cotton seed	290	cwts.	,,		7	0	=	101	10	0	479	cwts.	,,		6	9	=	161	13	3
Vegetables	221,119	,,	,,		6	6	=	71,863	13	6	423,146	,,	,,		7	6	=	158,679	15	0
Tomatoes...	—	—	--		--			--			41,470	,,	,,		3	3	=	6,738	17	6
Forages	457,270	"some"	,,		4	6	=	102,885	15	0	439,488	"some"	,,		5	0	=	109,872	0	0
Maize	566	qrs.	,,	2	0	0	=	1,132	0	0	383	qrs.	,,	2	0	0	=	766	0	0
Melons and Water Melons ...	32,156	cwts.	,,		8	3	=	13,264	7	0	27,633	cwts.	,,		6	8	=	9,211	0	0
Prunings	34,100	"some"	,,		2	9	=	4,688	15	0	—	—	--		--		=	—	—	--
								£609.784	19	2								£727,218	17	11

APPENDIX XI.

Average prices of Agricultural Produce during 1932-33 and 1933-34.

	1932-33.				1933-34.				
	£ s. d.		£ s. d.		£ s. d.		£ s. d.		
Wheat	1 16 8	to	2 1 10		1 15 0	to	1 18 4		per quarter.
Barley	16 8	,,	18 4		0 15 0	,,	1 2 6		do.
Meslin	1 1 8	,,	1 5 0		1 5 0	,,	1 10 0		do.
Beans	1 10 0	,,	1 13 4		1 11 8	,,	2 10 0		do.
Peas	3 0 0	,,	— — —		3 0 0	,,	— — —		do.
Common Vetch	1 10 0	,,	1 13 4		1 13 4	,,	2 0 0		do.
Chickling Vetch	1 13 4	,,	1 16 8		1 13 4	,,	2 3 4		do.
Bitter Vetch	1 10 0	,,	1 13 4		1 9 2	,,	1 16 8		do.
Spring and Summer Potatoes	6 8 0	,,	10 3 4		2 15 6	,,	9 12 0		per ton.
Winter Potatoes	1 12 0	,,	3 10 6		3 4 0	,,	6 8 0		do.
Onions	6 6	,,	1 12 0		7 6	,,	12 10		do.
Cumin	1 6 8	,,	1 8 9		1 12 0	,,	2 4 9		per cwt.
Citrus Fruits	3	,,	6		6	,,	9		per dozen.
Grapes	6 6	,,	9 7		6 7	,,	10 8		per cwt.
Figs (fresh)	3 6	,,	6 0		3 9	,,	6 6		do.
Prickly Pears	3 0	,,	5 6		3 0	,,	6 0		do.
Other Friuts	7 6	,,	9 6		8 0	,,	10 0		do.
Vegetables	4 6	,,	10 0		5 6	,,	12 0		do.
Cotton	4	,,	— — —		3¾	,,	— — —		per lb.
Forages...	4 0	,,	4 9		5 0	,,	6 0		per load of 10 bundles.
Wheat-straw	3 6	,,	4 0		2 0	,,	2 6		per net.
Barley-straw	1 0	,,	1 1		1 0	,,	1 2		per load of 10 bundles.
Firewood, thick	7 0	,,	9 0		7 0	,,	8 3		per pesata of 300 rt.
Firewood, in bundles ...	2 6	,,	3 6		2 3	,,	2 9		per load of 10 bundles.
Goats' milk	1 8	,,	2 0		1 8	,,	2	0½	per gallon.
Cow's milk	3 3	,,	— — —		3 3	,,	— — —		do.
Wine (common)	1 8	,,	2	1½	1 8	,,	2	2½	do.
Cheese	1	1½ ,,	2 1		1	1½ ,,	1 4		per lb.
Cheese (fresh)	5	,,	6		5	,,	7		do.
Wool	1 9	,,	— — —		— — —	,,	— — —		do.
Beef	11	,,	1	1½	10¼	,,	1	1½	do.
Pork	10	,,	1	0½	10	,,	1	0½	do.
Mutton	9½	,,		10½	9¼	,,		10½	do.
Lamb	9½	,,		10½	9¼	,,		10½	do.
Eggs	7	,,	2 3		7	,,	1 8		per dozen.
Poultry	2 0	,,	6 0		2 0	,,	4 6		per head.
Rabbits	1 6	,,	2 6		1 6	,,	3 0		do.

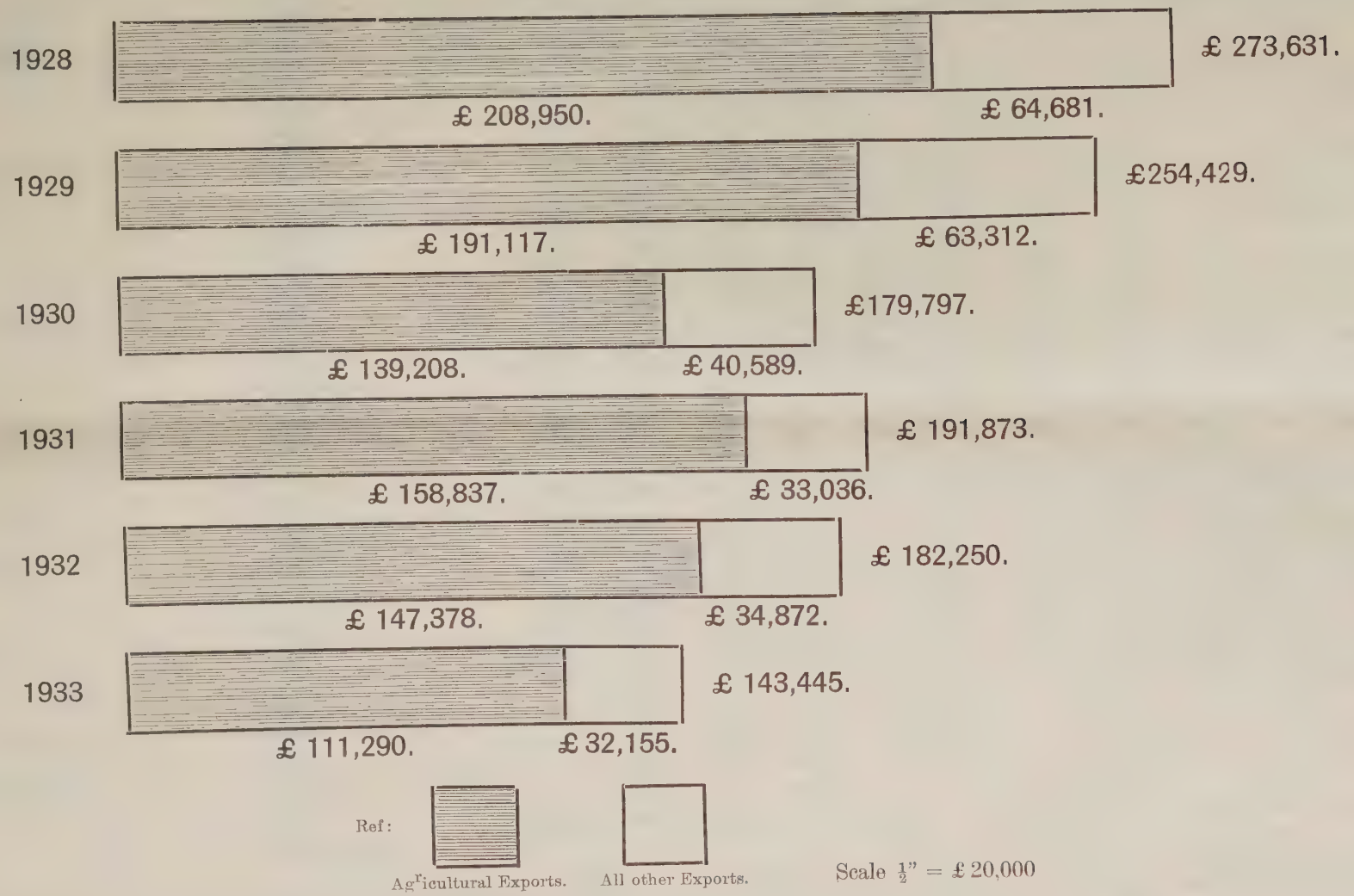
APPENDIX XII.

The Police returns of livestock on the 31st December 1933 as compared with the returns on the 31st December 1932, are given in the subjoined table.

Livestock	31st December, 1933			31st December, 1932		
	Malta	Gozo	Total	Malta	Gozo	Total
Cattle:—						
Maltese breed... ...	1,838	459	2,297	2,143	324	2,467
Foreign breeds ...	933	682	1,615	899	763	1,662
Ovines:—						
Goats	20,697	7,711	28,408	21,437	7,419	28,856
Sheep	11,148	8,474	19,622	11,373	8,635	20,008
Pigs	4,649	866	5,515	3,619	717	4,336
Donkeys:—						
Maltese breed... ...	106	37	143	115	40	155
Foreign breeds ...	2,755	1,298	4,053	2,866	1,208	4,074
Horses...	2,712	339	3,051	2,857	357	3,214
Mules	2,526	566	3,092	2,491	553	3,044

APPENDIX XIII.

Diagram showing relation between "Agricultural Exports" and "All other Exports", for the years 1928-1933.



N.B. Diminishing values due to fallling prices.

APPENDIX XIV.

Return showing Quantities and Values of Agricultural Exports during the years 1928-33.

Article	Country of Final Destination		1928		1929		1930		1931		1932		1933	
			Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value
				£		£		£		£		£		£
Animals living:—														
Fowls Poultry	Libya	No.	370	83	630	156	88	18	...	...	...	...	...	...
Sheep and Swine	Libya	,,	10	40	...	...	...	...	...	...	...	...	...	...
	Tunis	,,	...	...	2	4	..	...	...	...	...	...	3	4
	Total ...	....	10	40	2	4	...	...	...	...	...	...	3	4
Cheese	Egypt	Cwts.	206	336	29	90	...	...	...	...	...	...	...	...
	Tunis	,,	27	60	33	121	35	104	24	60	1	3	4	13
	Total ...	... ...	233	396	62	211	35	104	24	60	1	3	4	13
Eggs	Libya	Doz.	240	12	...	...	...	...	...	...	...	...	...	...
	United Kingdom...	,,	...	...	...	...	...	...	...	...	3,300	135	100	5
	Italy	,,	...	...	...	...	...	...	...	...	60	3	...	...
	Total ...	... ...	240	12	...	...	...	...	...	...	3,360	138	100	5
Fruits (fresh or dried):—														
Oranges and Mandarines	United Kingdom...	Doz.	8,398	553	7,981	505	6,832	408	1,324	82	1,209	91	6,492	234
	France	,,	211	14	...	...	70	3	...	...	..	...	...	...
	Germany	,,	5	1	...	...	...	...	...	...	...	...	...	...
	Norway	,,	...	...	178	10	...	...	...	...	...	...	...	...
	Total ...	... ...	8,614	568	8,159	515	6,902	411	1,324	82	1,209	91	6,492	234
Other fruits	Egypt	Value	...	33	...	...	...	...	...	...	...	...	...	...
	Italy	,,	...	234	...	...	...	67	...	90	...	...	...	...
	Libya	,,	...	35	...	130	...	39	...	...	...	...	...	...
	Norway	,,	...	17	...	...	...	...	...	...	...	...	...	...
	Tunis	,,	...	47	...	...	...	10	...	42	...	...	...	...
	United Kingdom...	,,	...	...	...	...	...	...	...	...	...	93	...	...
	Total ...	... ...	...	366	...	130	...	116	...	132	...	93	..	...
Pulse:—														
Kidney Beans...	Belgium	Cwts.	...	...	...	...	...	...	...	...	...	...	148	60
	Italy	,,	10	4	...	...	...	...	...	...	...	...	...	...
	Libya	,,	16	10	...	...	...	...	...	...	...	...	...	...
	Total ...	... ...	26	14	...	...	...	...	...	...	...	...	148	60
Tomato Sauce and extracts of tomatoes	Italy	Cwts.	1,953	2,225	48	50	...	...	...	...	...	...	...	...
	Tunis	,,	91	232	165	229	...	...	6	8	...	...	...	...
	South America ...	,,	171	352	...	...	...	...	...	...	...	...	...	...
	Brazil	,,	...	...	...	...	955	807	...	...	...	...	...	...
	Spain	,,	...	...	...	...	20	15	...	...	...	...	...	...
	Ceylon	,,	...	...	...	...	...	...	2	3	...	...	...	...
	Cyprus	,,	...	...	...	...	...	...	...	...	438	370	40	40
	Total ...	... ...	2,215	2,809	213	279	975	822	8	11	438	370	40	40

APPENDIX XIV.— *cont.*

Return showing Quantities and Values of Agricultural Exports during the years 1928-33.

Article	Country of Final Destination		1928		1929		1930		1931		1932		1933	
			Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value
				£		£		£		£		£		£
Vegetables:—														
Garlic	Egypt	Cwts.	64	29	...	...	...	...	...	...	...	...	...	...
	Greece	,,	640	275	...	...	...	...	...	...	...	...	...	...
	Tunis	,,	163	50	213	62	...	...	...	...	18	9	87	39
	Libya	,,	...	...	46	16	...	...	...	...	...	...	...	...
	United Kingdom ...	,,	...	...	...	...	...	...	...	...	120	70	...	...
	Belgium	,,	...	...	...	...	...	...	...	...	10	5	...	...
	Total	...	867	354	259	78	...	...	...	...	148	84	87	39
Onions	United Kingdom...	Cwts.	3,802	587	2,420	435	5,385	663	7,096	1,442	12,498	3,064	2,510	414
	Trinidad	,,	557	260	397	140	...	...	...	...	...	...	...	...
	Austria	,,	669	230	2,280	340	4,321	658	...	...	...	...	...	...
	Belgium	,,	1,588	446	2,939	549	400	60	1,326	400	1,027	442	3,055	132
	Denmark	,,	97	15	544	103	146	14	94	25	...	...	...	...
	Germany	,,	1,980	380	1,846	288	240	52	...	...	...	...	...	...
	Greece	,,	365	79	...	...	...	...	...	...	...	...	...	...
	Hungary	,,	400	160	...	...	...	...	...	...	...	...	...	...
	Italy	,,	11,730	1,775	17,281	2,823	11,299	2,227	380	175	8,267	2,018	...	...
	Libya	,,	2,047	608	2,124	530	2,140	318	590	129	130	27	867	162
	Netherlands ...	,,	28,464	4,405	43,661	7,513	19,254	2,829	15,296	3,618	42,084	7,846	13,672	1,027
	Norway	,,	677	173	384	66	545	115	316	82	841	186	452	88
	Sweden	,,	221	85	...	...	...	...	...	...	...	...	...	...
	Tunis	,,	9,902	1,920	9,125	2,653	6,145	1,451	3,812	913	3,447	872	3,281	537
	Cuba	,,	...	...	296	62	...	...	...	...	...	...	...	...
	Total	...	62,499	11,123	83,297	15,502	49,875	8,387	28,910	6,784	68,294	14,455	23,837	2,360
Potatoes	United Kingdom...	Tons.	792	11,756	239	2,891	...	...	496	5,172	1,448	14,701	648	6,842
	Belgium	,,	65	924	331	3,275	16	100	164	1,520	310	3,612	665	3,938
	Germany	,,	597	7,349	2,189	25,159	1,081	9,849	604	6,010	538	6,174	342	2,236
	Hungary	,,	23	200	47	530	70	395	...	...	...	...	...	...
	Italy	,,	378	5,474	1,214	14,134	514	4,965	300	3,714	296	3,581	169	1,666
	Netherlands ...	,,	7,750	101,335	6,753	61,823	6,083	55,201	7,604	78,792	6,619	67,731	7,140	58,604
	Dutch West Indies	,,	20	184	...	...	...	...	...	...	...	...	...	...
	Switzerland ...	,,	58	661	39	390	46	390	38	345	61	645	54	442
	Tunis	,,	8	85	1,832	12,554	772	4,380	...	...	411	2,647	102	460
	Ceylon	,,	...	...	739	6,527	1,799	12,060	1,841	13,350	690	5,526	1,048	5,169
	Austria	,,	...	...	60	770	10	55	...	...	20	180	...	...
	Denmark	,,	...	...	1	10	...	...	...	...	...	...	...	...
	Egypt	,,	...	...	4	22	50	413	...	...	...	...	...	...
	Greece	,,	...	...	10	70	8	32	...	...	...	...	...	...
	Turkey	,,	...	...	25	248	...	...	...	...	...	...	...	...
	British India ...	,,	...	...	...	...	3	20	...	...	...	...	...	...
	Spain	,,	...	...	...	...	...	...	895	6,332	...	...	...	...
	France	,,	...	...	...	...	...	...	...	...	32	257	...	...
	Sudan	,,	...	...	...	...	...	...	...	...	...	...	1	7
	Libya	,,	...	...	...	...	...	...	...	...	...	...	1	4
	Total	...	9,691	127,968	13,483	128,403	10,452	87,810	11,942	115,235	10,425	105,054	10,170	79,368
Tomato	Italy	Tons.	...	...	...	...	...	...	...	...	...	...	...	8

APPENDIX XIV.—*cont.*

Return showing Quantities and Values of Agricultural Exports during the years 1928-33.

Article	Country of Final Destination		1928		1929		1930		1931		1932		1933	
			Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value
				£		£		£		£		£		£
Vegetables—cont.														
Other vegetables	United Kingdom ...	Tons	...	...	...	...	...	...	...	...	...	...	...	4
	Tunis	„	...	...	...	...	...	...	...	...	...	...	...	26
	Total		...	...	...	...	...	...	...	...	...	...	...	30
Bones and hoofs	United Kingdom ...	Cwts.	...	...	...	...	...	...	...	...	...	...	41	8
	France	„	660	163	159	45	...	...	...	...	...	...	...	...
	Germany	„	544	152	379	105	752	265	...	...	...	...	...	...
	Italy	„	488	162	2,494	791	1,417	441	410	87	102	18	4,450	960
	Netherlands ...	„	1,483	464	60	195	...	...	3,830	905	...	...	...	...
	Austria	„	...	...	318	55	...	...	...	...	...	...	...	...
	Total		3,175	941	3,410	1,191	2,169	706	4,240	992	102	18	4,491	968
Cotton (raw)	United Kingdom ...	Cwts.	35	212	...	...	...	...	...	...	...	...	149	349
	Greece	„	772	3,065	...	...	...	...	...	...	...	...	...	...
	Italy	„	2,966	11,571	846	3,169	...	...	...	...	...	...	314	687
	Spain	„	52	202	...	...	...	...	...	...	...	...	...	...
	Germany	„	...	...	...	...	...	...	...	...	...	...	34	20
	Total		3,825	15,050	846	3,169	...	...	...	...	...	...	497	1,056
Cumin seed	United Kingdom ...	Cwts.	100	255	225	565	50	150	...	...	140	182	100	229
	Trinidad	„	223	548	61	137	20	46	40	91	...	...	...	...
	Algiers	„	47	117	65	175	...	...	...	...	...	...	...	...
	Brazil	„	320	816	842	2,150	...	...	...	...	...	...	...	...
	Chili	„	598	1,620	312	881	197	565	282	431	502	739	90	125
	Egypt	„	301	668	750	2,000	46	120	845	1,232	502	612	806	930
	Germany	„	1,509	3,689	1,062	2,420	1,466	3,405	1,623	3,522	1,903	1,993	1,611	2,226
	Greece	„	40	98	...	...	...	...	...	...	...	...	...	...
	Italy	„	488	1,236	308	784	266	607	61	130	196	286	350	697
	Libya	„	61	91	42	78	59	103	34	34	...	...	10	16
	Netherlands ...	„	1,196	3,071	2,219	5,668	2,433	5,951	2,092	3,900	788	918	1,117	1,730
	Norway	„	120	296	70	167	140	326	116	213	50	67	110	240
	South America (country unspecified) ...	„	200	340	100	240	...	...	...	...	...	...	...	...
	Tunis	„	53	109	186	391	69	179	138	283	25	26	121	198
	U.S. America ...	„	407	925	205	575	...	...	102	200	...	...	255	461
	France	„	...	...	2,022	4,489	950	2,076	556	890	1,353	1,328	362	500
	Sweden	„	...	...	10	22	15	40	...	...	...	...	...	...
	Argentine Republic	„	...	...	...	...	639	1,687	427	761	596	839	163	260
	Peru	„	...	...	...	...	70	195	...	...	...	...	...	...
	Mexico	„	...	...	...	...	...	...	41	85	...	...	...	...
	Roumania	„	...	...	...	...	...	...	151	320	...	...	...	...
	Ceylon	„	...	...	...	...	...	...	...	...	382	554	...	...
	Bolivia	„	...	...	...	...	...	...	...	...	2	2	..	...
	Portugal	„	...	...	...	...	...	...	..	...	100	141	...	...
	Spain	„	...	...	...	...	...	...	103	200	100	110	102	100
	Belgium	„	...	...	...	...	...	...	...	...	...	...	21	30
	Denmark	„	...	...	...	...	...	...	...	...	...	...	10	15
	Total ...	... ...	5,663	13,879	8,479	20,742	6,420	15,450	6,611	12,292	6,639	7,797	5,228	7,751

APPENDIX IV.—*cont.*

Return showing Quantities and Values of Agricultural Exports during the years 1928-33.

Article	Country of Final Destination		1928		1929		1930		1931		1932		1933	
			Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value
				£		£		£		£		£		£
Hides and Skins (raw or dried) ...	United Kingdom...	Cwts.	131	345	342	843	134	430	195	445	56	90	18	103
	Albania	,,	30	101	...	...	...	...	...	...	...	...	...	...
	Belgium	,,	76	644	102	845	12	27	...	...	16	190	21	267
	France	,,	635	2,851	36	450	237	722	357	893	769	1,727	187	955
	Algiers	,,	2	36	...	...	...	...	...	...	...	...	...	...
	Germany	,,	114	598	63	89	...	...	276	756	19	20	5	15
	Greece	,,	2,745	9,124	995	2,829	553	1,472	363	510	3,142	4,214	2,301	3,162
	Italy	,,	2,121	10,798	1,083	7,734	7,436	18,822	4,938	11,918	3,614	6,502	4,524	7,681
	U.S. America ...	,,	107	591	102	265	...	...	...	...	...	...	...	...
	Netherlands ...	,,	...	...	...	...	15	65	3	15	...	...	...	...
	Turkey	,,	...	...	...	...	243	405	754	1,163	391	501	290	427
	Syria	,,	...	...	...	...	...	...	...	...	23	34	...	...
	Spain	,,	...	...	6	73	...	...	...	...	...	...	...	...
	Libya	,,	...	...	...	...	...	...	...	...	...	...	558	800
	Total ...	... ...	5,961	25.088	2,729	13,128	8,630	21,943	6,886	15,700	8,030	13,278	7,904	13,410
Tallow	Italy	Cwts.	2,120	3,875	2,800	4,580	987	1,411	4,094	4,394	2,716	3,369	2,294	2,338
	United Kingdom ...	,,	...	...	...	...	...	...	1,017	1,428	...	...	6	7
	Netherlands ...	,,	...	...	...	...	...	...	22	35	...	...	...	...
	Total ...	... ...	2,120	3,875	2,800	4,580	987	1,411	5,133	5,857	2,716	3,369	2,300	2,845
Tar	Egypt	Cwts.	2,151	506	1,514	335	505	112	...	...	...	...	...	...
	Tunis	,,	214	68	3	3	...	...	...	...	2,685	464	100	25
	Belgium	,,	...	...	...	...	...	...	...	...	524	58	426	42
	Italy	,,	...	...	...	...	...	...	...	...	...	...	20	5
	Total ...	... ...	2,365	574	1,517	338	505	112	...	...	3,209	522	546	72
Horns and hoofs	France	Cwts.	...	...	...	...	...	...	...	...	157	50	...	...
	Italy	,,	...	...	...	...	...	...	...	...	20	7	...	...
	Total ..	... ...	...	...	...	...	...	...	...	...	177	57	...	...
Squills	United Kingdom ...	Cwts.	...	...	...	...	...	...	...	...	...	...	20	20
Animals living:- Horses	Tunis	No.	17	375	5	54	1	12	4	230	...	...	1	20
	France	,,	...	...	...	...	...	...	10	55	...	...	...	...
	Total ...	... ...	17	375	5	54	1	12	14	285	...	...	1	20
Donkeys	Tunis	No.	9	43	6	75	3	22	...	...	3	17	...	...

APPENDIX IV—*cont.*

Return showing Quantities and Values of Agricultural Exports during the years 1928-33.

Articles	Country of Final Destination		1928		1929		1930		1931		1932		1933	
			Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value	Quantities	Value
				£		£		£		£		£		£
Animals living—cont.														
Goats	Italy	No.	8	70	...	...	...	...	...	...	...	...	...	...
	Cyprus	,,	...	...	...	...	12	35	...	...	...	...	...	...
	Total ...	... ...	8	70	...	...	12	35	...	...	...	...	...	...
Mules	Tunis	No.	57	756	33	320	26	351	7	65	...	...	...	...
	France	,,	...	...	...	...	...	...	5	29	...	...	...	...
	Total ...	... ...	57	756	33	320	26	351	12	94	...	...	...	...
Foods for animals—Bran	United Kingdom ...	Cwts.	366	150	478	120	478	106	...	...	...	...	6,552	1,275
	Germany	,,	6,100	1,966	1,600	440	...	...	...	...	...	...	...	...
	Italy	,,	1,124	303	2,429	645	2,806	495	3,457	613	137	31	75	13
	Libya	,,	6,939	2,058	3,391	1,035	3,516	780	2,829	700	6,140	1,858	3,586	801
	Tunis	,,	...	...	...	...	...	...	...	...	338	85	...	...
	France	,,	...	...	...	...	...	...	...	...	...	...	3,156	820
	Total ...	... ...	14,529	4,477	7,898	2,240	6,800	1,381	6,286	1,313	6,615	1,974	13,369	2,909
Grain—Barley	Italy	Cwts.	...	...	...	...	260	72	...	...	...	...	...	...
Pulse—Beans	Italy	Cwts.	15	15	...	...	39	45	...	...	40	50	47	45
	Libya	,,	70	48	...	...	...	...	...	...	15	8	67	55
	Tunis	,,	36	26	2	2	...	...	...	...	...	...	...	...
	Total ...	... ...	121	89	2	2	39	45	...	...	55	58	114	100
Wine in Bottles—(Still)	United Kingdom ...	Galls.	...	...	...	...	...	...	...	...	...	...	200	41
	Greece	,,	...	...	...	...	...	...	...	...	...	...	21	18
	Turkey	,,	...	...	...	...	...	...	...	...	...	...	12	13
	Total ...	... ...	...	...	...	...	...	...	...	...	...	...	233	72

EXPERIMENTAL FARM,

Hammieri, 30th October, 1934.

Sir,

I have the honour to submit the following report on the working of the Experimental Farm and Stud Station, and on the organization of Agriculture for the agricultural year 1933-34.

I have, etc.,

(Sd.) A. Azzopardi,

Director of Experimental Farms
and Agricultural Organizer.

The Superintendent of Agriculture,
Valletta.

Field Crops.

Potatoes.

(a) An experiment was carried out with the White Long variety to ascertain the effects of wood-ashes as a fertiliser. The resulting crop was classified as "ware", "seed" or "undersized" potatoes where the tubers had a diameter respectively over $1\frac{1}{2}''$, less than $1''$ and between $1''$ and $1\frac{1}{2}''$.

Four plots of half a tumolo each received different manurial treatment and the results are as shown hereunder :—

No. of Plot	Manuring	Production in kantars			Total Production	Production per tum.
		Ware	Seed	Undersized		
1	23 kantars of ordinary cow-manure 1 kantar of ashes	5.69	2.85	·40	8.94	17.98
2	23 kantars of organic manure ...	6.95	2.44	.40	9.79	19.58
3	10 rotoli sulphate of ammonia 23 kantars of organic manure 1 kantar of ashes	7.93	2.45	·30	10.68	21.36
4	10 rotoli of sulphate of ammonia 23 kantars of organic manure	6.77	2.66	·30	9.98	19.96

Plot No. 1 which received ashes and cow dung shows the lowest return; plot No. 3 which was treated with ashes, organic manure and sulphate of ammonia, gave the heaviest crop, the bulk being "ware" potatoes while the "seed" and "undersized" categories are the lowest. This is noteworthy as it shows that a good percentage of the entire crop was marketable, inasmuch as only ware potatoes are in demand for export.

The practice of adding ashes to organic manure is one that should be adopted by our farmers, as besides their fertilising action, ashes can be obtained either free or at a nominal charge.

(b) A series of experiments was carried out to determine the precise period in summer when tubers should be sown to obtain the best potato harvest in autumn, irrigation being resorted to. The results obtained do not furnish us with reliable data to proceed upon, first because the experiments were not carried out upon a sufficiently extensive scale, and secondly because the water at our Experimental Farm is more or less brackish. There is a probability that the salinity of the water had a prejudical effect upon the potato plants in the early stages of their existence.

Another point which claimed attention was the fact that two plots sown respectively on the 21st July and on the 4th August, arrived at maturity simultaneously. In my opinion, the importance of such a factor should not be overlooked. The variety selected for these experiments was the Queen Mary and the results are herewith appended :—

Plot No.	Weight of seed in rotolos	Date of sowing	Date of lifting	Production in kantars	Production calculated on the basis of 80 rot. of seed
1	65	21st July	14th Nov.	3.49	4.30
2	80	4th Aug.	14th Nov.	4.01	4.01
3	88	16th Aug.	24th Nov.	5 47	4.97

(c) The two Dutch varieties, Alpha and Binje, were the subject of another experiment. In my opinion, if we could produce for the Dutch market potatoes raised from seed grown in the Netherlands the result would be of great benefit both for our growers and our exporters. This principle should apply in our export to other countries as well. The ideal potato should be a heavy cropper, disease-resisting, early and capable of a reasonable yield of seed potatoes which should also produce a good winter crop.

The plots, each measuring $\frac{2}{3}$ of a tumolo were treated identically, the results were as follows :—

As regards total production there was no appreciable difference, but as to exportable tubers the Binje variety produced .80 Kantars more than the Alpha; growth in the Benje was more vigorous; the Binje plants appear to resist our unfavourable weather conditions better; the Alpha was a fortnight earlier in maturing. The subjoined table shows the result as regards the cropping powers of these two varieties.

Plot No.	Variety	Production in kantars			Total produc. in kantars	Production per tumulo
		Ware	Seed	Undersized		
1	Alpha	3.80	2.72	.62	7.14	10.71
2	Binje	4.60	2.24	.46	7.40	11.10

Wheat.

(a) One of the circumstances affecting adversely the wheat grower in these Islands is the occurrence of hot winds in the months of May and June, that is the period when the grain is filling; these winds cause the seed to shrink and remain undersized. With the object of selecting a variety ripening early enough to avoid the incidence of these winds, experiments were carried out with three Italian varieties and two Maltese ones. The Italian varieties were :—(a) Cappelli, medium early, widely cultivated in Southern Italy and in Sicily; (b) Virgilio; (c) Mentana, these last two being early and designated "razze elette". The Maltese varieties were (d) local yellow and (e) local red; great care being taken to secure pure seed of these latter. The reason for sowing Maltese varieties in this instance was to secure reliable data for purposes of comparison with the foreign ones. The field utilised for this trial was part of the land formerly pertaining to the Labour Training Centre and had remained derelict for several years; the soil is calcareous; 9.20 kantars (4 "viaggi") of cow dung and 15 rotoli of Superphosphate were used to fertilise the land which was divided into 5 equal plots. The results obtained are as recorded hereunder :—

Plot No.	Variety of Wheat	Date of sowing	Manuring with sulphate of ammonia during growth of crop		Date of sprouting	Appearance of ears	Order of ripening	Production per tum.		Equivalent in local measure			Remarks
			Date	Quantity				Wheat in kantars	Straw No. of netts	Salma	Wejbjiet	Tum-moli	
1	Cappelli ...	28th Dec.	26. 2. 34	3 rot.	12th Jan.	14th April	3	3.34	12	1	—	2½	Irregular growth, some ears full, others empty. No infection.
2	Virgilio ...	28th Dec.	26. 2. 34	3 rot.	12th Jan.	27th April	2	3.47	8	1	1	—	Uniform growth, some ears infected with rust.
3	Mentana ...	28th Dec.	5. 3. 34	5 rot.	8th Jan.	2nd April	1	2.10	8	—	1	3	Weak tillering; ears uniform; no infection.
4	Red wheat ...	29th Dec.	2 . 3. 34	5 rot.	12th Jan.	Not observed	4	2.10	Not observed	—	1	3	Irregular ears, some well-grown others much shorter in the empty seed.
5	Yellow wheat	29th Dec.	—	—	12th Jan.	Not observed	4	Not observed	Not observed	—	—	—	Irregular ears, some well-grown others much shorter in the empty seed.

It will be seen that Cappelli and Virgilio varieties gave great satisfaction; as regards the Mentana, while the results obtained are not such as to qualify it as very productive, a better yield may be expected if it be sown in a different soil.

It is superfluous to state that a single experiment is not sufficient to formulate a definite judgment; consequently these varieties would be subjected to further trial at the Experimental and Stud Station and also in fields of private farmers. For this purpose 19 plots in Malta and 9 in Gozo have been selected, differing in depth and in quality of soil, in aspect and in altitude.

(b) Two plots were sown with Cappelli and Virgilio wheat respectively, in order to note the difference in produce where sowing is done by hand and where it is done by drilling. The land selected for this purpose was similar to that of the experiment mentioned in the preceding paragraph and in both cases the treatment accorded, manurial and other, was identical. The results are as tabled below:—

Variety of wheat	Production per tumulo				Production per tumulo, local measure			
	Wheat		Straw		Drilled		Hand sown	
	Drilled	Hand sown	Drilled	Hand sown	Salme	Tumuli	Salme	Tumuli
Cappelli ...	3.34	2.50	12 netts	11 netts	1	2½	1	1
Virgilio ...	3.47	3.00	8 „	8 „	1	4	1	½

These results are so striking that every effort should be made to induce our farmers to give up hand sowing and adopt drilling. Several reasons militate in favour of sowing in drills, as uniform growth, easier cultivation, lesser amount of seed; where farming has developed scientifically, sowing by hand has been completely discarded.

Lucerne.

An attempt is being made to introduce Lucerne into these Islands. The cultivation of this excellent forage crop should be limited, at least for the present, to those farmers, who, besides having the water necessary for irrigating it, possess livestock which can consume it directly. Used in this manner, Lucerne is a very profitable investment for the farmer. Those who have water but no such livestock should devote themselves to other lines. Preparations are on hand for sowing Lucerne in certain soils with a view to obtaining cuttings every year without having recourse to irrigation.

The number of varieties tested has been eight, the seed having been imported from countries whose climatic conditions greatly resemble ours. Three parcels came from South Africa, three from Spain, one from Tripoli, and one from the Argentine. The last named variety was sown on September 3rd having been received a few weeks previously, while all the other were sown on the 12th of March previous to this. Immediately before flowering the cutting of the crop was taken in hand. The subjoined table shows the yield and the number of cuttings of each variety.

Plot No.	Variety	Area in sq. feet of each plot	I Cutting		II Cutting		III Cutting		IV Cutting		V Cutting		VI Cutting		Total production per Tumoli	Production per Tumolo
			No. of days after sowing	Weight in Qantars	No. of days after I cutting	Weight in Qantars	No. of days after II cutting	Weight in Qantars	No. of days after III cutting	Weight in Qantars	No. of days after IV cutting	Weight in Qantars	No. of days after V cutting	Weight in Qantars	Total production in Qantar	Production per Tumolo
	From Spain.															
1	Alfalfa de Fontana ...	1617	84	·47	31	·72	28	·84	27	·85	25	·89	...	...	3·77	28·21
2	Alfalfa de Aragon ...	1609	84	·49	31	·68	28	·75	25	·68	26	·86	...	...	3·45	25·90
3	Milga Medicago Rustica	1592	84	·53	30	·66	28	·84	24	·60	26	·76	...	...	3·39	25·70
	From South Africa.															
4	Provence	4800	85	·88	31	1·70	27	2·81	24	2·66	28	2·20	...	...	10·25	28·00
5	Hairy Peruvian ...	4525	87	·89	24	1·62	24	2·30	21	2·13	30	2·29	...	...	9·23	24·66
6	Hunter's River... ...	4725	77	2·70	28	3·29	24	4·51	22	3·38	28	2·24	28	2·10	16·12	43·39
	From Tripoli.															
7	Tripoli Lucerne ...	4625	79	2·65	22	3·07	21	3·95	20	4·51	24	2·69	27	3·00	16·87	44·14

In so far as actual yield is concerned, Hunter's River and Tripoli Lucerne appear to be the best croppers; it would be advisable however to wait for some time—say a twelve month—to pass in order to ascertain whether the high promise of these two varieties is maintained. However, as their produce is so greatly in excess of that of all the others and as their seed is already available, I suggest that steps be taken in order to propagate one of these varieties. I have to add that demands for seed of locally grown Lucerne have been met and the best strains have been distributed to all who asked for them.

Soya Beans.

The yield of this leguminous plant recorded two years ago was very poor, being barely 75 rotolos for slightly less than one tumolo of land. This meagre result being attributed—as was stated at the time—to the late sowing and to the absence of the specific strain of the *Bacterium radicicola*.

This year another plot was selected for trial, the soil was suitably prepared, and mould from the previous plot was spread over the surface and the beans sown immediately after, i.e. on the 20th March and 3rd April. In its initial stages the crop appeared to be healthy and vigorously, but later on chlorosis supervened; nitrate of soda was administered with beneficial results. Still later, another disease made its appearance and this, upon investigation turned out to be due to an acarid *Tetranychus telarius* which could be kept in check by dusting with lime sulphur; however as this remedial measure was applied only when the disease had reached an advanced stage, several plants had succumbed. The surviving plants are in excellent condition, they are now in pod, and their eventual ripening is being carefully watched.

It is advisable that trials be carried out with an early variety instead of the present late; in this case better results may be reasonably expected.

Horticulture.

Tomatoes.

a) Six varieties of tomatoes were the subject of a trial carried out for obtaining an autumn crop. The seed was sown on the 2nd of June 1933; 28 plants of each variety were grown; the first crop was lifted on the 22nd September and the last one on the 8th November; in all five gatherings were made. The results are appended in the following table :—

Plot No.	Variety	Shape (globular)	Size	Production in rotoli	Production per plant
1	Essex Wonder ...	Retained	First cut irregular then uniform.	55	1.27/28
2	Sunrise (Sharpe) ...	Irregular	Do.	53½	1.51/56
3	Sunrise (Sutton) ...	Almost retained	Do.	61¼	2.21/112
4	Sutton Majestic ...	Do.	Do.	52¾	1.99/112
5	Sutton earliest of all	Do.	First cut uniform then slightly irregular.	62	2.3/14
6	Kondine Red ...	Do.	Uniform.	76½	2.41/56

In all the varieties, as is the general rule, the intermediate crops were the heaviest, while the first were more abundant than the last. The ripe fruit, particularly in the first crops, was cracked; while rings noticeable in the early liftings disappeared in the

late ones. The incidence of cracks may be countered by gathering the crop much earlier, and, in case the fruit is intended for export, it should be lifted as soon as it begins to redden. On the whole, as regards production, retention of shape, uniformity of size, freedom from cracks and rings, the Kondine Red proved superior to all the others.

(b) The varieties indicated in the table hereunder were cultivated for seed. The land was heavily manured, receiving a dressing of 62 kantars of bullocks' dung per tumolo. The seed was sown in beds on the 28th February and the seedlings were transplanted on the 24th April. The disease *Bacterium lycopersicae* affected the following varieties: Prince of Wales, Every Day, and Golden Nugget.

Plot No.	Variety	No. of Plots of each variety	Production	Production per tumulo
1	Best of all	35	54 rot.	1.19/35
2	Every Day	25	48 ,,	1.23/25
3	Princess of Wales	25	63 ,,	2.23/25
4	Majestic	41	4 ,,	.1/10
5	Perfection	27	49 ,,	1.22/27
6	Golden Queen	35	71 ,,	2.1/35
7	Golden Nugget	64	103 ,,	1.39/64

Experiments were carried out on French beans, on peas, and on Brussels sprouts, but for reasons stated elsewhere in this report the results could not be recorded.

The following experiments also were attempted:—

i) treating clover seed in the shell with different doses of diluted sulphuric acid in order to hasten germination; owing to autumn rains falling late in the season the results of this treatment could not be reliably ascertained.

ii) preserving spring potatoes for sowing the following spring—if successful this could seriously affect the annual importation of seed. The best room available in the Experimental and Stud Station was selected for the purpose, but the tubers became ringled and some went mouldy, and when eventually the residue was sown the result was a negligible crop. In my opinion the room in question lacked sufficient light and ventilation; the ideal would be attained by having a room with double walls of glass with an air space between.

Livestock Breeding.

Pig rearing.

At present the following boars for service are housed at the Experimental and Stud Station:

Berkshire No. 6, Berkshire No. 7, Large White No. 8, Middlewhite No. 9, Saddleback No. 10.

Farmers from all parts of the country are at liberty to bring their sows to be served by these boars, a service fee of 1s/ per each sow is charged. As may be seen from the table hereunder, several farmers availed themselves of this Branch of our Department, the greater number being from the villages nearer the Stud Station; later, those living in most distant centres also begun bringing their sows, intimating their preference for the Department's boars. The number of services by each boar are more or less equal, as no boar is allowed to serve two consecutive sows, service being ruled by strict rotation. Owing to an outbreak of swine Erysipelas in the country districts during the month of July, service was temporarily suspended to obviate any danger of our boars getting infected.

The following table gives the number of services by each boar and the villages from which the sows were brought.

Services performed by the boars at the Stud Station from the 19th March up to the end of October.

Place	Breed				
	1 Wessex Saddleback	2 Berkshire No.	3 Berkshire No.	4 Large White	5 Middle White
Żebbuġ	10	3	6	4	5
Qormi	8	11	8	...	6
Birkirkara	4	1	4	1	1
Siġġiewi	2	1	..	...	...
Msida	2	5	1	2	1
Balzan	2	1	...	2	1
Mqabba	2	2	...	2	...
Żabbar	4	5	5	6	6
Rabat	3	...	1	7	...
St. Paul's Bay ...	3	4	1	3	2
Santa Vennera ...	1	...	...	2	..
Kirkop	1	3	2	..	1
Axiaq	1	1	...	1	1
Marsaxlokk... ...	1	...	...	1	1
Luqa	1	...	2	...	1
Żurrieq	2	1	1	...	...
Marsa	1	...	2	4	3
Lija...	..	...	1	5	1
Żejtun	...	3	3	2	1
Stud Station ...	..	2	...	...	...
Hamrun	2	1	1	6	...
Birżebbuġa	...	..	2	...	1
Naxxar	1	...	2	...	...
Cospicua	...	...	..	...	1
Pawla	1	2	..	2	1
Tarxien	6	3	2	2	4
Kalkara	1	1	...	...	2
Għargħur	...	2	...	...	...
Total No. of services	59	51	44	46	40

Gozo interests are looked after by eight farmers to whom boars are given on loan. These farmers receive a subsidy of £12 per annum for feeding and looking after the animal. Besides, keepers are instructed to serve all sows which private farmers may bring to be served by their boar. The following are the centres where the boars are stationed:—3 at Nadur, 2 at Kaccia, 1 at Victoria, 1 at Kercem and 1 at Xeukia.

In the selection of centres, due consideration was given to the importance of pig rearing districts, Nadur and Kaccia being foremost in this respect. This system of loaning service boars had to be adopted as no Branch of the Experimental and Stud Station is yet established in Gozo.

Gozitan farmers have a decided preference for white pigs, although from an economic point of view the Berkshire (black) is in no way inferior to the white breeds.

Pig rearers show a decided preference for having their sows served by imported boars. Nearly all of them are keeping first-cross boars for breeding purposes while the wean piglings fetch a higher price than those of the local breed.

It is to be noted that those of our boars which served only a small number of sows were either housed in a district where pig rearing is in little vogue or else because individual farmers have a dislike for the particular boar of their district.

The following table shows the number of (recorded) services of each boar and the district from which the sows were brought.

Services performed by the Boars at Gozo from the 19th March to the 30th August.

	Breed	Village in which boar is kept	Victoria	Kala	Nadur	Żebbuġ	Għarb	Għajnsielem	Kerċċia	Xewkija	Sannat	Kerċem	Munxar	Għasri	Total Number of services
1	Berkshire No. 2	Victoria	8	...	...	2	...	...	...	...	...	...	...	...	10
2	Large White No. 11 ...	Nadur ...	...	8	42	...	...	4	...	1	...	...	...	...	55
3	Middle White No. 13 ...	Nadur ...	...	...	54	...	...	...	...	...	...	...	...	...	54
4	Berkshire No. 3	Xagħara ...	...	...	...	...	...	...	32	...	...	...	...	...	32
5	Large White No. 12 ...	Xagħara	11	...	...	1	...	...	38	...	...	...	...	...	50
6	Wessex Saddleback No. 15...	Xewkija	5	...	...	...	...	9	4	10	...	2	5	...	35
7	Middle White No. 14 ...	Kerċem	3	...	...	1	2	...	...	...	1	7	...	1	15
8	Berkshire No. 1	Nadur ...	...	1	20	...	...	4	...	...	...	...	...	...	25

Two sows of the Berkshire breed are being reared at the Experimental and Stud Station. Both of them farrowed for the second time, on the 25th and 27th September respectively, Sow No. 5 having a litter of 10 and Sow No. 4 a litter of 7. It is desirable that both these and the young ones of the previous farrowing should be subjected to a rigorous selection regarding their morphological, physical and constitutional traits.

Poultry rearing.

The plan prepared by me for all buildings, pens and runs of the poultry section is being carried out, some of the pens being already completed while the rest will be so in the early future. As soon as a Poultryman is appointed, steps should be taken to import three breeds viz : an egg laying breed, and two dual purpose breeds. While the birds should be descended from strains which have laid 250-300 eggs in one year, they should also be tested for B.W.D. and tubercolosis.

An attempt is being made to create a Maltese breed. The local breed, including the black hens is a mongrel one. A proof of this is furnished by hatching eggs laid by black hens mated with a black cock. The chickens—as has been my experience—were all different in size, colour, comb, shanks, etc. The black colour has been selected for the new breed, as it is easier to fix black than any other one. In our case the selection of white would lead us to the White Leghorn which has been widely distributed in these Islands of recent years.

Both Malta and Gozo were toured for Black hens and up to the present about 50 have been bought, black feathers being the only character looked for. This number may be increased when pens to house 150 hens have been constructed. A difficulty encountered in increasing the present number of hens is the fact that perfectly black cocks are very seldom met with. I have bought two young ones, but, should they eventually develop feathers bordered red, white, or pale yellow in the heckle, they will have to be discarded. At present, one cock aged 1½ years is being mated with a small number of hens.

Some years' hard work, combined with careful and rigorous selection, must intevene before we obtain a uniform type of local breed. When this breed is fixed, however, it will be superior to imported ones as regards stamina and resistence to disease.

The fowls, before putting them in their respective pens were vaccinated against fowl pox, tested for B.W.D. and submitted also to the tubercolosis test; those reacting were discarded.

A well-balanced ration has been prepared and details were published in the October number of the "Melita Agricola". In preparing it, due consideration was given to the foodstuffs available in the Island. Certain concentrated foods, necessary

to complete the ration, cannot be obtained locally; in order to encourage their adoption, as stated in the same number of the Agricultural Review these foodstuffs will be supplied by this Department at cost price to all those who may apply for them. This distribution will begin by the middle of October.

Donkeys.

The mule-getting breed of donkeys is at present represented in our Stud Station by two jacks, five jennies and two young jacks, four months old. Times have changed, and the once very important industry of mule breeding, owing to the mechanization of the greater part of the means of transport has been nearly abandoned. A proof of this is the small number of services performed during the last four years: Although at the Stud Station there have always been good jacks and this service is rendered free, yet on the average only three jennies every year have been served. As the upkeep of this Branch of the Stud Station amounts to £132 a year, the expense of every service amounts to £44. Of all these only two females are capable of doing work at the Experimental Station. The nature of the work is very light, and only imperfect work is done when ploughing in the field.

Cows.

Recently a cow of the local breed has been bought. The object of rearing such a cow is not for breeding purposes as it has no value, being very bony, with a poor milk yield, and is slow to fatten. But it is good for field work. In fact it is proposed to train one farmer and get him to specialize in the management of the iron mould board ploughs which are unknown to our farmers, and which do much better work than the usual Maltese plough. Such work could not be done before as the Experimental and Stud Station had not the requisite animal.

Farm Implements.

A garden tractor on the lines suggested in my previous report has been bought; its interchangeable parts enable it to do several kinds of work which cannot be done by labourers, either because work will not be so efficient or else because the work will be very expensive.

Analysis of organic manure.

To determine what quantity of artificial manure should be added to organic manure for the various crops, it is necessary to determine the value of local organic manure. Accordingly 20 samples were gathered and have been sent to Rothamstead Experimental Station to be analysed there. Great care has been exercised in selecting the samples and each of them represents the typical manure used in the district.

Zymothermic cells.

I have treated the details of this system in annexe to the Report by the Delegation —of which I formed part—that visited the Boggiano-Pico plant for the treatment of house at Reggio, Calabria.

Propaganda Work.

Very slowly but progressively farmers are breaking their traditional adherence to old methods and recourse is being made to this Department for advice. Seeds of plants unknown in these Islands, the cultivation of which has proved useful, have been distributed, and farmers have been instructed in the new cultivation, either at the Experimental Station, or else on their own fields. The poultry buildings and pens have been shown and explained to several persons interested in this branch of farming and the most progressive of them have adopted the same plans for their own farmsteads. While practical lessons on the spot were given to farmers, tours about the country in connection with the organization of agriculture were made. Many poultry keepers sought advice to cure ailments while projected poultry farms were visited at the request of owners and advice given. Other unsolicited visits were made to livestock rearers and suggestions were made to ameliorate their routine. Farmers in Gozo have been instructed in the fundamental principles of pig rearing, numerous pig-sties have been visited and suggestions for improvements made. The greatest drawback for rearing pigs, is the complete absence of cleanliness. Great emphasis is laid on the importance of keeping all farm animals in the best hygienic conditions.

REPORT OF THE PLANT PATHOLOGIST.

Sir,

I have the honour to submit the following report on the work done in Plant pathology during the year 1933-34.

I. Imports subject to Phytopathological Restrictions.

2. The imports subject to phytopathological restrictions during the year included Citrus fruits, potatoes, onions, garlic, parcels of fruit trees, flowering bulbs, ornamental shrubs and leaf mould.

3. Citrus fruits were imported mostly from Sicily and Spain, but there were a few parcels of oranges from Jaffa and of grape-fruit from South Africa, the United States of America, Palestine, Jamaica and Tripoli. These imports were estimated at:

Oranges	934,812	dozen
Lemons	108,012	,,
Mandarine oranges	4,433	,,
Grape fruit	1,112	,,

4. Potatoes were imported from the British Isles, Holland, Belgium, Spain and Italy.

The potatoes imported from the British Isles were used mostly for seed purposes. These included:

Champions	30,766	bags of 2 cwt. each
Up-to-date	3,840	,, ,, 2 ,, ,,
Northern Invincible	4,019	,, ,, 2 ,, ,,
Royal Kidney	202	,, ,, 1 ,, ,,
Arran Banner	300	,, ,, 1 ,, ,,
Other varieties	59	,, ,, 1 ,, ,,

The latter comprised King Edward, Arran Chief, Sharpe's Express, Majestic, Tinwald Perfection, Arran Pilot, Arran Crest, British Queen, Garden Feller, Duke of York, Kerr's Pink, Sutton's Abundance, Early American Rose, Beauty of Hebron and May Queen.

These were imported in small consignments of one or two bags by amateurs for their kitchen garden or by exporters for trial.

The potatoes imported for food purposes included:—

164,075 Kgs. from the United Kingdom.
469,869 Kgs. from Italy.
870,400 Kgs. from the Netherlands.
401,000 Kgs. from Spain.

There were also 10,500 Kgs. imported by Mendicant Religous Orders.

5. Onions were imported from Egypt, garlic from Sicily, and fruit trees, ornamental shrubs, flowering bulbs and leaf mould were imported from Great Britain, Holland, Germany and Italy.

6. The number of consignments forming these imports totalled 1,101. There were in addition a few parcels received through the post which were not claimed by the consignees. These were handed over by the Postal Authorities for destruction.

II. Exports for which Phytopathological Certificates were issued by this Department.

7. The agricultural produce for exportation for which phytopathological certificates were issued by this Department during the course of last year included:— Potatoes for England, Scotland, Holland, Belgium, Germany, Switzerland, Palestine, Sudan and Ceylon. Cumin seed for the U.S. of America, the Argentine Republic and England. Onions for England, Scotland, Holland, Tunisia, Tripolitania, Norway and Sweden. There were also small parcels of live plants for England, France and Italy.

8. The number of consignments forming these exports was 169, but some of the consignments were much larger than usual. There was, however, a fall in the

The Superintendent of Agriculture,
Valletta.

total quantities of agricultural produce exported this year, due to the lateness of the crops.

III. Departmental Activities in the Field.

(1) *Scale Insects.*

9. Last summer there was a recrudescence of scale insects particularly of *Chrysomphalus dictyospermi* Morg. A general survey of the groves and gardens of both Islands revealed 7,496 Citrus trees, 920 fruit trees and 176 rose-bushes infested by the insect. These were sprayed twice with Volck emulsion during the season. Spraying with the same preparation was also applied to all the Citrus trees in San Antonio Public Gardens (1,225 trees), mostly as a precautionary measure, and to the stock of the Lia Nursery which includes 10,000 graftlings of Citrus trees.

10. *Icerya purchasi* Mask., the Fluted Scale-Insect, was also in evidence. Its increase in number is to be attributed to the severity of the preceeding winter which weakened and in some cases actually killed the colonies of the ladybird *Novius cardinalis* established in the open. Fresh colonies of *Novius* from the breeding cages of the Department were distributed in 26 gardens to clear the pest.

(2) *The Woolly Aphis.*

11. There were outbreaks of *Eriosoma lanigerum* Hausm. in practically all the apple orchards of Malta and Gozo. These outbreaks were severe at Rabat, Dingli, Mtaħleb, Baħrija and Buskett. Winter treatment with washes of Permanganate of Potash 2% and injections into the soil with Carbon bisulphide were applied to 8,843 apple trees distributed in these localities. Early in April the pest re-appeared on the branches and crowns of the roots in some places. These were treated with a thick limewash on the main stem and exposed roots and with methylated spirits containing 1 in 40 of Cresol on the branches.

(3) *The Fruit Fly.*

12. Interesting experiments were made last year for this pest at Buskett and San Antonio Gardens. The trees, 2,214 in number, were sprayed every 15 days between the 1st of June and the 31st of October with soap washes. These consisted of a simple solution of soft soap in water, 1 in 32. The results obtained were very satisfactory, especially at Buskett where the fruits were practically free from the larvae and bites of the insect. The fruit fly appears to shun dirt of any kind, and other experiments conducted on a small scale in private gardens, where the trees were heavily dusted with sulphur instead of sprayed with soap solutions, gave equally good results.

(4) *The Mole-Cricket.*

13. The Mole-Cricket, *Gryllotalpa vulgaris* Anet. is getting more and more troublesome on irrigated lands which are kept under cultivation with vegetables without a break for several years in succession, which is the practice prevailing in these Islands. By way of encouragement to the growers I treated 50 tummoli of land with Vaporite, which gave very good results. Other plots treated with naphthalene in powder likewise gave good results, and as this substance is always easily obtainable on the local market, many farmers have now adopted it on my recommendation. I found it difficult, however, to persuade these farmers to grow wheat instead of vegetables every third year, which is the easiest and, under existing conditions, probably also the cheapest way of keeping this pest in obeyance.

(5) *The Bark Beetle.*

14. The infestation with the Bark Beetle, *Scolytus rugulosus* Ratz, reported last year, has spread in Gozo to a considerable extent. The trees attacked were plums, apricots, almonds, peaches and nectarines. Treatment with Potassium sulphide solutions, 1 in 250, was applied to 995 trees in Malta and to 10,389 trees in Gozo. The treatment does not appear to be unsatisfactory.

(6) *The Apple-tree borer.*

15. The apple-tree borer, *Cerambix miles*, Lin., is responsible every year for the destruction of a large number of apple trees and pear-trees. The pest is difficult to control. An easy and radical treatment consists in cutting and burning the affected branches, but if this treatment were generally adpoted the apple and pear trees in our orchards would soon be reduced to mere skeletons.

16. Recommendations are made every year to orchardmen to examine their trees for the pest before May and to seek out and kill the larvae by introducing into the wound a bit of stiff wire which is pushed up the tunnel made by the insect, until the larvae are reached and killed. Another and perhaps a more efficient method is to place a tiny bit of carbide in the hole and to close up with moist clay. This will cause the carbide to decompose evolving scetylene gas which is very poisonous to insect life. The carbide can be replaced by a piece of cotton-wool soaked in carbon-bisulphide, but this process is more tedious and somewhat dangerous to the operator. The staff of this Department treated 650 apple-trees for this pest last year.

(7) *Powdery Mildew and Downy Mildew of the Vine.*

17. Last year there was a mild outbreak of the Powdery Mildew of the vine, *Oidium Tucheri*, Berk., and of the Downy Mildew of the Vine, *Peronospora viticola*, Du Bary. A vigorous propaganda was carried out to induce farmers to spray, and about 463 tummoli of land cultivated with vines were treated under the direct supervision of the staff of the Department. The vineyard of Boschetto covering about 75 tummoli of land was also sprayed four times during the season.

(8) *The Potato Crops.*

18. Both the winter and the summer crop of potatoes were exceptionally free from disease, but owing to a spell of dry weather the winter crop turned out a complete failure. The spring crop which up to March promised very little development owing to another long spell of fine dry weather during February and March, yielded an unusually heavy crop after repeated showers which began towards the close of March and continued well after the middle of April. As signs of disease appeared in some parts of the Island after these showers, 463 tummoli of land grown with potatoes were sprayed once or twice wtih Bordeaux mixture under the direct supervision of the staff of this Department to allay the alarm roused among the growers.

In an Esthonian publication (R.A.M. xiii, 799) circulated recently, Wart Disease of Potatoes (*Synchytrium endobioticum*) is recorded as present in Malta. It is possible that this mistaken impression is based on the interception and destruction, many years ago, (1894—Vide Malta Governmernt Gazette 12th January 1895, Government Notice No. 16) of consignments of seed potatoes which reached this port in a badly blighted and semi-rotten condition. Wart Disease of Potatoes (*Synchytrium endobioticum*) does not exist and is not known to have existed in the Maltese Islands.

(9) *The Root-Rot.*

19. The reports of outbreaks of root-rot, *Armillaria mellea* Sacc. were received during the year, one from Żabbar where 10 Citrus trees and 20 fruit trees were attached and one from Siġġiewi where 15 Citrus trees were affected. These trees fully recovered after the application of sulphate of iron to the roots.

(10) *Tree-cancer.*

20. The treatment of Citrus trees affected with Cancer at Boschetto was continued this year and 240 trees were cleared of the dead wood and the cavities carefully filled with cement after a thorough disinfection. Some of these trees, 71 in number, were provided with iron bars to support the branches before filling.

21. The treatment applied last year to 91 trees has been very successful. The treated trees have shown good progress and acquired a new and probably long lease of vigorous life. Considering the slowness of the growth of Citrus trees until they attain full size and normal production, the expense of this treatment, which is small, is very remunerative.

(11) *Lichens on trees.*

21. Many trees at Boschetto are badly affected with lichens of the genus *Ramalina*. The clearing of these lichens is really part and parcel of ordinary cultivation, but for some reason no attention has ever been given to them. Two years ago I cleared the Citrus trees of this growth, but last year the work could not be continued owing to lack of funds and only a few trees in the private gardens were partly treated. This year the treatment has been taken up again and I hope that in due time all apple-trees and olive-trees will be free of this growth.

IV. Technical Instruction to Farmers and Growers.

22. Last year an extensive campaign was carried out among farmers and growers not to neglect the treatment of their crops for diseases and pests. This propaganda was often accompanied by technical demonstrations or by direct treatment as detailed below. Such campaigns now form part of the ordinary routine work of this section of the Department, and advice and help is not extended only to those who are progressive enough to ask for it, but brought to the very door of the farmers and growers whose ignorance and slowness of appreciation is not their own fault but the outcome of an obsolete system of things.

23. The cost of these campaigns is very insignificant when compared with the benefits which are derived from them, and consist of the wages of three or four labourers and a foreman, and a small supply of chemicals which are consumed in the course of the demonstrations themselves. The chemicals used by the farmers generally are procured from local tradesmen, although the Department keeps also small quantities in stock for sale or to meet emergencies.

24. The numbers of famers and growers, vineyardowners and orchardmen who benefited by these demonstrations were the following :—

1,250 farmers were approached to treat the winter or spring crop of potatoes with Bordeaux Mixture.

184 growers were advised to treat the fig-trees with lime-washes for the fig-scale, *Ceroplastes Rusci*.

300 vineyardowners were recommended to treat their vineyards with Bordeaux Mixture and sulphur powder for the Downy Mildew and the Powdery Mildew of the vine.

146 farmers and growers received instruction and small quantities of chemicals free of charge for the treatment of mildew and rusts, scale-insects, aphides, caterpillars, slugs and other pests.

314 orchardmen received technical demonstrations on their own lands for the control of the Pau Rouge, *Chrysomphalus dictyospermi*.

74 owners of apple orchards who had their apple trees treated with winter washes of Permanganate of Potash and injections of Carbon bisulphide to the soil for the Woolly Aphis, *Schizoneura lanigera*.

31 farmers were given demonstrations for the control of the mole-cricket, *Gryllotalpa vulgaris*, with Vaporite on their lands.

119 fruit-tree growers who had stone fruit trees affected by the Bark-beetle, *Scolytus rugulosus*, treated with washes of Potassium sulphide.

V. Issue of Certificates and Inspection Work.

25. The number of certificate issued by this Department during the year included :—

817 certificates of release for agricultural produce imported into these Islands, and

169 phytopathological certificates for agricultural produce exported from these Islands.

There were also 284 consignments of agricultural produce accompanied by the prescribed certificates and released for importation into these Islands after examination of the documents.

26. In connection with the issue of these certificates 986 inspections of agricultural produce were made at the Marsa or in the Customs Ware Houses and in private stores. In connection with the Departmental activities in the field and the supervision of labour under my charge, 136 localities in both Islands were inspected, during the year.

I have the honour to be,
Sir,
Your obedient servant,

(Sd.) P. Borg,
Plant Pathologist.

REPORT ON VITICULTURE AND OENOLOGY.

Sir,

I have the honour to submit the Report on Viticulture and Oenology for the year 1933-34. I wish to point out that, whilst I began work on the 3rd October 1933, the Government Nurseries of American Vines were not put under my charge until January, 1934.

A. DeNardo,
Oenologist.

The Superintendent of Agriculture,
Valletta.

GENERAL OUTLINE.

Numerous visits to almost all the viticultural centres of these Islands have been made and the conclusions arrived at may be summarised as follows.

Extension in Gozo.

In Gozo the cultivation of the vine has developed very markedly and is continually extending, even to the best lands of the Island. This is largely attributed to the success of the new plantations on American stock and to the average prices obtained for the crop. The heavy demand for stock from our nurseries indicates that from 200 to 250 tumoli are being planted annually, and it is noteworthy that the greater part of the new plantings are being made on the richest soil where other crops can offer good returns.

In a country such as this, where the production of essential agricultural products is far below local requirements, the fact that vines tend to supplant other crops needs careful consideration by economists.

Extension in Malta

In Malta, notwithstanding the fact that the price of grapes is generally higher than that in Gozo, the reconstruction on American stock of vineyards affected with Phylloxera is progressing both slowly and irregularly. This is attributed to several causes, principally to the proximity of the market which claims the largest proportion of all the agricultural products of these Islands and to the relatively easy means of communications with foreign markets, which makes it more profitable for farmers to grow short term crops. Nevertheless, short term crops should not be consistently preferred, since the non-exitence of commercial organization often causes losses even where fertile soil and irrigation have combined to give heavy crops. Malta, in contrast with Gozo, has considerable areas of land which are poor, shallow and arid, and in which only the vine can give a sure return.

However, after old vineyards on free vinifera had succumbed to Phylloxera, the new plantations of American stock generally remained stunted owing to the aridity of the soil and to the difficulty in selecting suitable varieties. In consequence, in many instances, farmers lost faith in American stock and either went on layering European vines in those places where owing to their nature the Phylloxera had not obtained a firm foothold, or gave up altogether the cultivation of the Vine. The tendency still prevails to plant on vinifera rootstock in preference to graftlings or to those destined for grafting, with such results as are easy to imagine.

In Comino the few vineyards, being on vinifera rootsock, have either been wiped out altogether by Phylloxera or are in process of being destroyed. Reconstruction on American Stock is, however, proceeding apace.

Varieties to serve as Stock.

As in all viticultural countries where the initial reconstitution of vineyards on American stock was, owing to the insufficiently reliable data at the disposal of

technicians, attended with indecision regarding the varieties to be adopted in different soils, so in these Islands preference has been given to varieties which offer greater vigour, and which thrive easily as regards planting, grafting, and cropping without consideration of other cultural requirements. Farmers, having observed the great vegetative vigour, the easy propagation, both by cuttings as well as by grafts, of the Rupestris du Lot, go on giving to this variety absolute preference over all others which are easily obtainable and go on propagating it even in soils to which it is ill-adapted. The Rupestris du Lot which is suitable only for poor and arid soils with a porous subsoil, has also been used on heavy clayey soils : in such localities it is subject to chlorosis, to *court noué* or *roncet* and to diseases of a cryptogamic nature : it induces a considerable millerandage on the European vine grafted on it, or—if the weather during the flowering season has been dry—it causes an excessive productivty as a result of which the grape does not come to maturity. Very frequently, and particularly in Gozo, entire vineyards have been found ruined owing to faulty selection of stock.

Naturally in the course of visits of inspection and propaganda, the necessity of giving more care to the selection of Americon stock and of abiding by my professional advice has been stressed.

Varieties of Vinifera Vines.

As regards the varieties of vinifera vines cultivated in these Islands, a worse combination could not exist.

Almost the entire viticultural crop produced locally—with the exception of a fraction consumed as table grapes—is at present used for the production of wine and as such it would be reasonable to expect a majority of wine producing varieties. The reverse is the case, however, and preference is persisently given to numerous table varieties (local hybrids and foreign varieties) which, whilst of great vigour and productivity are very far from being suitable for wine production. The fact that the local viticulturist gives his preference to such varieties is easily explained and is to be attributed to the present system of selling grapes to wine producers by weight and not by quality and sugar content. These table varieties are heavy croppers and give better returns, and the viticulturist in general, who is not a wine producer, does not trouble to bother about the quality of the resulting wine. The wine producer on the other hand, whose interests are diametrically opposite, and who buys the grapes as a rule by weight in the vineyard, can neither impose his will nor express a preference for wine-grapes, these latter being but a very negligible proportion of the crop.

The laying out of new plantings, the ordinary routine work in vineyards, both in Malta and Comino, leave much to be desired. In Gozo they are capable of improvement.

Disease control.

With regard to the knowledge of the diseases of the vine and of measures to combat them, the farmer stands greatly in need of instruction. Climatic conditions during the past season have favoured the development of a variety of diseases. Particular reference must be made to cryptogamic diseases which, on account of persistent humidity and high temperature, were somewhat virulent. Faced by numerous instances of these diseases, the farmer remained passive and inert; an evident symptom of his ignorance as to the means of combating them. The viticulturist this year may consider himself lucky in having experienced a spell of dry weather during the ripening period as otherwise the harvest would have been very poor both in quality and in quantity.

The above summary gives the general aspect of viticulture in Malta, and, on the face of it, the problems to be solved are both numerous and knotty. On the other hand it is superfluous to dwell on the importance of viticulture to this country, inasmuch as others, before me, have already decided this point.

I shall now deal with the steps which have been taken and which it is proposed to take in order to effect an improvement in production :—

I. Reference to the statistics of the importation of wine, which represents at least 75% of the local consumption, is sufficient to indicate that viticulture can be extended with relative safety. It is stressed that it is inadvisable

to go to extremes in planting vineyards where the soil is suitable for the cultivation of other crops such as wheat, tomatoes, potatoes, etc. but those lands which are shallow and arid should be exploited, since in these only the vine can yield profitable returns. Therefore in Gozo vine extension should be looked upon unfavourably whilst the reverse should hold good for Malta. This will not be easy of attainment in Gozo before organization is effected in the trade of other agricultural products which is at present in the hands of speculators.

Selection of Stock.

II. As regards the selection of varieties of stock for the various soils of these Islands, there is lack of those suited for lands which are heavy, alkaline, and liable to induce chlorosis. It is consequently necessary to import other varieties of American vines and subject them to experiments before releasing them for propagation—and this will be done during the forthcoming planting season.

To avoid the recurrence of the mistakes which have occurred very frequently in the past with respect of American stocks it is intended to superintend future plantings to ensure planting of stocks which are suitable to the particular types of soil.

III. Since the vinifera varieties now grown locally do not conform to the requirements of the market, and pending the results of experiments as to what varieties should be cultivated, some varieties of scions will be imported during the coming season, for free distribution to growers wishing to lay without delay homogeneous vineyards for wine production. For this purpose selections have been made in Sicily— a country with a very similar climate—of several scions of recognized varieties which will be obtained from the cuttings of the winter pruning. It cannot be stated whether these Sicilian varieties will come up to expectations: they have, however, been selected from the hardiest and most productive types and bearing a grape with a heavy sugar-content; also the affinity between these scions and the principal American stock in these Islands has been kept in mind. It must be stressed that a long period of cultivation and trial must intervene before definite judgement can be given. It is considered that several experimental vineyards should be laid out without further delay, in which to experiment on the few Sicilian varieties to be imported this year as well as on sundry vinifera varieties, which promise good results.

Experimental Vineyards.

IV. Nine (9) experimental vineyards have already been selected in the most important viticultural centres of Malta and Gozo. These vineyards which will be managed by private owners under the direction and control of the Department of Agriculture, will be used to study the behaviour of American stock under different soil and climatic conditions, the degree of affinity with differnt European wine grape varieties and productivity and disease resistance. These vineyards will also be of value in giving instruction regarding general cultural practices.

Cultivation of Table-grapes.

V. The production of table grapes also merits attention. The possibility of producing grapes for export needs consideration, but up to the present insufficient data have been obtained to decide upon the expediency, or otherwise, of undertaking and developing an export trade. Many difficulties would be experienced, chief among which are the lack of technical instruction, of an expert personnel, and of commercial organization. It is no easy matter to evolve a personnel that is skilled in the cultivation of table grapes and it is no less difficult to organise a successful export trade in a country like this where private property is very much subdivided. For the present it is considered that table grape culture should be developed for local consumption. It is intended to have an Experimental Vineyard where trials can be carried out with different early and late varieties of table vines (particularly the early ones) which will find a ready demand in the local market.

VI. Another point to be emphasised is that the viticulturist should be better trained for the struggle against disease. With this end in view, demonstration plots (or farms) should be laid out in those districts where vine growing is most prevalent.

VII. In order to forward the improvement of viticulture in these Islands, the administration of Government owned land should contribute its share. State property should be an example for farmers, and with such land a betterment could be quickly effected, with relative ease, inasmuch as definite lines of cultivation of definite crops could be laid down. These Government fields, which constitute a considerable proportion of the agricultural land of Malta and Gozo, if well managed, could serve admirably to instruct private farmers. It is suggested that the Department of Agriculture should take a part in the management of Government property to ensure a suitable standard of cultivation.

NURSERIES OF AMERICAN VINES.

The present system of producing nursery stock, i.e. by means of Government nurseries, run by the Department of Agriculture, is an excellent method for improving local viticulture.

The condition of the nurseries in 1933 was far from satisfactory and as such much attention has been given to them during the past year.

There are five nurseries of American vines (three in Malta and two in Gozo) of an aggregate area of 81 tumoli.

1. *The Tarxien Nursery.* Area 18 tumoli. On the 1st January 1934 there were in it under cultivation:—

5,910 American mother plants.
650 European vines grafted on American stock—as a collection.

Owing to the arid and shallow nature of the soil of this nursery and to the fact that no fertilisers had ever been applied, the plants were in a very poor condition. Since, in addition, the greater part of the area is being converted into building sites it is considered useless to go to the trouble of carrying out improvements, or to devote further attention to the plants. As the number of mother plants in the other nurseries was considered to be sufficient for the production of the amount of cuttings usually required, it was proposed that the place should be handed over to the Public Works Department for building purposes. Later on, however, owing to unforeseen circumstances, there was a substantial reduction in the number of American mother plants in the other nurseries, and this fact necessitated the carrying on of the Casal Tarxien nursery for another year, in order to obtain the necessary quantity of American cuttings.

The collection of European vines grafted on American stock was of no practical utility besides being run down to such an extent as to be unproductive; these plants were pulled up and the ground occupied by them will be sown with wheat.

2. *The Rabat Nursery, Boschetto.*—Area 12 tumoli.

This nursery subdivided into four plots, had in it on the 1st January 1934 the following vines:—

4,559 American mother plants.
66 hybrids, direct producers,
46 different European varieties, grafted on American stock (young plants).

As in Casal Tarxien, the state of affairs in 1933 was far from satisfactory as regards cultivation, but it was not such as to demand such extreme measures as those which eventually became necessary.

By giving a liberal dose of chemical fertilisers (inasmuch as the season was too far advanced to permit of organic manure being used) it was considered that the plants could be somewhat restored to healthy vegetation. Later on, however, it became obvious that the plants would not recover and I was compelled to destroy almost all the American mother-plants. The rootlings in this Nursery had also to be subjected to a severe selection, and in consequence the production of nursery stock at Boschetto, will this year be very limited.

Altogether, 3,303 mother-plants were pulled out, among them being 437 Berlandieri, the wood of which was never utilized since cuttings of this variety root with much difficulty. There remains 1,257 mother-plants.

The sections which remained vacant were cultivated deeply and will be used as trial plots for wheat, potatoes and forage plants.

3. *The "Ta Sammat" Nursery in Pawla.*—Area 21 tumoli.

On the 1st January 1934 the following plants were under cultivation :—

3,800 vines, American mother plants.

1,200 seedlings of the common orange.

The American mother-plants, planted recently (1931) were found to be sufficiently vigorous; but, being young plants, the number of cuttings taken from them during the past winter season was very small.

The Rupestris du Lot variety, for the planting of which the ground had been systematically worked, and manured, found favourable conditions for developing its powerful root-system and, throve so well this year that it is hoped to make good, from its cuttings, the losses suffered in the other nurseries.

The same cannot be said with respect to the Berlandieri X Riparia 420A and to the Chasselas X Berl. 41B for which the preparatory working and manuring of the soil could not be completed in time. During the past year the aim has been to make up as far as possible for the deficient treatment of the soil at the time of planting, but the varieties under consideration would never give us a heavy wood-crop. However, we may expect their productivity in this respect to be increased.

During the period of active vegetation for Rupestris du Lot mother-plants were discovered to be affected with Roncet and were destroyed.

The common orange seedlings in this nursery, owing to lack of irrigation and exposure to high winds were rather stunted in growth; it was considered advisable to transfer them to the grounds under the management of the Superintendent of Public Gardens, whilst the area vacated by them has been treated and will serve for a plantation of new varieties of American vines to be received from abroad.

4. *Victoria Nursery, Gozo (Rundle Garden)*—Area 21 tumoli.

5,587 American mother plants.

1,998 European vines (local and foreign) grafted on American stock and on hybrid direct producers as a collection.

The plants in this nursery are generally in good condition since they are well planted in deep clayey soil and periodic applications of organic manure have been given. The only exception is the Rupestris du Lot which cannot thrive in this soil, which is too moist and overlies a watertight subsoil.

A plot of this Nursery was recently planted with Rupestris du Lot, but from the very beginning it was unsatisfactory. Later on it was noticed that the plants, besides suffering from the excessive moisture in the soil, were suffocated; the reason for this being that they had been planted too deep. Chlorosis was present and several exemplars gave unmistakable symtoms of Roncet. In order to avoid greater evils, such as a spread of Roncet among the other plants, it was considered advisable to have the entire plot uprooted.

The Berlandieri Res I and the Aramon X Rupestris Ganzin No. I were uprooted, the first because the cuttings were rooting very poorly, and the second on account of its weak resistance to Phylloxera. The plots which remain vacant will, for a year or so, be put under field crops and will subsequently serve for mother plants of selected varieties.

At present there are 4,630 mother-plants under cultivation.

The European vines under cultivation in this Nursery constitute two collections, namely of local and foreign varieties. The former were originally laid down in order to ascertain the degree of grafting affinity with American vines, and the latter to study their adaptability to the climate. No reliable information could be obtained regarding the method adopted in planting these vines, or of the stock used. From the moment of planting up to the present day no records were taken. So far as can be checked, the vines in the foreign section are mostly incorrectly named. These two collections are thus of no experimental value.

During the past summer season a list of the greater number of ampelographic features in the varieties forming the foreign collection were made with a view to identifying those which appeared to be most noteworthy.

These collections were used to carry out a series of trials against fungoid pests by means of different coppersalts both as powders and in solution. The results of these trials will be definitely known in about a year's time, after experiments have been repeatedly carried out.

Those foreign vines which during this year have been observed to be of no interest and of small productivity will be over-grafted with more productive varieties and, in case of success, they can be made use of as mother-plants for the production of scions.

5. *Kerċem Nursery, Gozo.*—Area 9 tumoli.

On the 1st January 1934 the following plants were under cultivation in this Nursery :—

1,918 American Vine mother-plants.
73 Fruit trees, different sorts.

Some of the mother-plants were in good health, while others, during the season of active growth, developed Roncet. The affected plants, which were exemplars of the Rupestris du Lot variety, were pulled out; some of the Aramon X Rupestris Ganzin No. 1 were also pulled out. In all, 233 mother-plants were destroyed leaving a balance of 1.695. The fruit trees grown in this Nursery are cultivated for the production of suckers and of scions. The suckers are planted out in beds and are sold as young fruit trees, while the scions are given free to the public.

6. *Summary—Production of Nursery—Stock during 1933-34*

During the past winter season the produce of American rootlings and graftlings from the Nurseries mentioned above was as follows :—

194,050 American rootlings,
6,104 graftlings

200,154 total production for 1933-34.

This produce was disposed of in the following manner :—

Sold to private individuals in Malta	46,500 American rootlings
	4,450 Graftlings
Passed over to Public Gardens	2,300 American rootlings
Sold to private individuals in Gozo	145,250 American rootlings
	1,654 Graftlings.
	200,154

NURSERY CULTURE IN 1934.

When the management of the Nurseries was assumed (January 1934) it was first necessary to see to the drainage, the paths and the walls—which, particularly in Gozo, left much to be desired—and then the plots destined to receive cuttings were prepared. The cuttings taken from all the American mother-plants (whether good or bad, healthy or diseased) showed their congenital weakness, as soon as the buds burst in spring, by taking poorly. Later on, the number of planted cuttings was further reduced, and, as a matter of fact, many rootlings were discarded because they revealed symptoms of disease which they had inherited from their parents. Nevertheless, it is hoped that the number of American rootlings available for sale will be equal—if not slightly greater—than that of last year.

During the summer season, in various nurseries sundry plots which have been allowed to lie fallow were brought under cultivation. These plots of an aggregate area of 6 tumoli will be used for increasing the number and variety of American mother-plants. Whilst the work of elimination and organization carried out in the Nurseries during the first year has not been without difficulties, fair success has been achieved: much, however, still remains to be done. Next year much better results are expected.

OENOLOGY.

The great necessity to organize the viticulture of these Islands and the numerous difficulties demanding prompt attention left no time available during the year under review for study of Oenological aspects but their complete disorganization is apparent.

The lack of a controlling board under the charge of a really competent person, produces inevitable result. There are two laboratories, one at the Customs and the other at the Public Health Department; the former serves to determine the alcoholic

percentage of imported wines in order to assess the duty, and the latter, by means of superficial analyses, reveals the addition of substances prejudicial to health. There does not exist, however, a fully equipped laboratory in the hands of a qualified person, to meet the exigencies of commercial requirements and also to constitute a regular service for the detection of adulterant..... and other fraudulent practices.

The economic importance of the trade in wine and in all alcoholic beverages in these Islands deserves more attention than that which has been bestowed upon it in the past.

Since 1931 the present Oenologist had occasion to study and develop propaganda in favour of the local wine industry; and this propaganda has this year been intensified by inspections of wine-cellars, by lectures, by advice, and by analyses, particularly, during the last vintage. A special service for the analysis of must during the last vintage season was also organized with a view to effecting improvements. As a matter of fact, it may be stated that producers of local wines have taken a step forward. It is desired however, to impress at once that without having recourse to heavy protective duties and energetic control, it will be impossible to reach the necessary degree of perfection.

In the Maltese Islands, and especially in Malta, the consumption of alcoholic beverages (common wines, fine, sparkling, and special wines, liqueurs, and aromatized spirits of various qualities), is relatively high. None of these types of beverage are produced in Malta, if we except common table wine, which is produced in quantities far from sufficient for local requirements. Scarcely any manufacturer succeeds in preparing special brands of fine wine and these produced are so inferior that they are absolutely of no importance.

In the country there are no distilleries (licit) and the alcohol consumed is almost all imported from abroad. The *vinasse* that is now produced is used for purposes other than the production of alcohol and of tartaric acid.

Once the wine industry has been legally and scientifically organized, a Cooperative Distillery under State supervision could be established which could utilize the *vinasse* and the wines which the requisite technical service would condemn as unhealthy, adulterated or artificial.

In order to improve and develop the Maltese wine industry, the importation from abroad of grapes (wine grapes should be permitted, the entry of which is at present prohibited for dubious phytopathological reasons.

Reference should be made to the proposed winery which is an indispensable complement to experiments in viticulture, in order to study the best exploitation of the primary material, and on the preparation of wine and special wines. It would also be indispensable, for the control of viniferous produce as regards the detection of fraud and adulteration and, finally, it woud be most useful for demonstrating to wine producers the technique of wine making.

In the foregoing review of the state of the Oenology of Malta, it is obvious that energetic measures need to be taken, failing which the propaganda work, useful and necessary for the improvement and organization of this branch of unquestioned economic importance, will be valueless.

Finally, it should be mentioned that the eno-chemical laboratory is almost in working order, and, although modestly and economically equipped, is nevertheless sufficient for studies on the various types of local wine and also for the requirements of the wine trade.

REPORT OF THE SUPERINTENDENT OF PUBLIC GARDENS AND PLANTATIONS.

OFFICE OF PUBLIC GARDENS.
San Antonio, 14th June, 1934.

Sir,

I have the honour to submit the annual report on the Public Gardens, Plantations and Nurseries for the year 1933-34.

GARDENS AND PLANTATIONS.

San Antonio Public Gardens.

Improvements.

2. The year 1933-34, will be remembered as the year during which improvements of a specially important and substantial character have been carried out.

3. The old and unsighty myrtle hedges on both sides of the path leading to the Diana pond were removed, and in their place two long, spacious borders were made; the ground was deeply trenched, and a fair amount of new soil incorporated with cow manure was added. They were planted with seven rows of double-flowering stocks, and a background of early flowering Sweet Peas trained on wire netting, and an edging of large flowering pansies. By this alteration it is now possible to get a clear view of the whole plantation in this section which is one of the beauty spots of these gardens. The public have been warm in their appreciation of this improvement.

Improvement of Growing House.

4. The small glass-house, or growing house, has been enlarged to double its size, the staging remodelled, and suitable ventilators provided. This was badly needed, and the altered glass-house will be found very useful for raising and propagating such plants as Begonias, Primulas, etc., of which so much use is made in these gardens.

Shelter for Seedlings.

5. A glaze-roofed shelter has been provided to protect annual seedlings from being sseverely damaged by heavy rain.

All these works have been undertaken with our handyman and his assistant, and at the cost of the ordinary maintenance vote.

Cultivation.

6. The work of replanting and re-arranging, digging and manuring the many beds and borders have been continued from last year. The orange groves received attention, and other trees have been pruned and shaped.

Trees and Shrubs added and replaced.

7. 4 grape-fruit trees, 150 ornamental shrubs and 24 Creepers have been added during the year, and 34 orange trees, 6 mandarines and 6 lemons have been replaced.

Floral Displays.

8. Displays of flowers have been maintained throughout the year. The flowers cultivated included : Tulips, Hyacinths, Daffodils, Anemones, Ixias, Freesias, Gladioli, Ranunculus, Mombretia, Achimenes, Dahlias, Stocks, Cinerarias, Petunia, Salpiglossis, Aquilegia, Antirrhinum, Schizanthus, Pansies, Godetia, Centauria, Verbena, Calendula, etc.

New Plants.

9. The following new plants have flowered during the year: Mesembryanthemums, received from Scilly Islands, Astilbe Hyacinth, A. Germania, A. Rhineland, A. hybrida King Albert, Acacia Trionfo di Martini, Gloriosa superba, G. Clusoni, Clerodendron Balfouri, Begonia Lloydii (pendula), Funkia grandiflora, Ranunculus asiaticus, giganteus florentinus (Ragioneri), from seed, Richardia Elliottiana, R. Rehmanni, R. Solfatare.

The Superintendent of Agriculture,
Valletta.

Lawns.

10. The lawns were regularly mown, rolled and kept in good order. A number of circular beds with Tulips and Begonia semperflorens have been planted among the grass.

Rose Borders.

11. The rose borders continue to be appreciated by visitors, many of whom take notes of the vareties grown with the view of adding to the collection in their gardens. Fifty new varieties imported from Messrs. Samuel Mc. Gredy & Son, Rose Specialists, Northern Ireland, have been added this year, of which the following are of special merit: Mc. Gredy's Peach, Mc. Gredy's Yellow, Cherry, Delightful, Lesly Dudley, Mrs. Samuel Mc. Gredy, Mr. Paul Goudie, Portadown Glory, William Orr, Mrs. A. R. Barraclough, Molly Darragh, Night.

Chrysanthemums and Dahlias.

12. Chysanthemums and Dahlias have become very popular, and they played a prominent part in the floral decoration of these gardens during the Autumn. The collections of Chrysanthemums consisted of 800 plants grown in pots, and 500 other plants grown in the open ground, and included Japanese, Incurved, Decorative, Pompone, Anemone-flowered, Cascade and Single varieties.

Aquatic Plants.

13. The ponds in these gardens are rich in vegetable life. There have been a fine display of flowers of Nymphaea and other aquatic plants. The Nelumbium and Nymphaea collection have been enriched by the following: Nelumbium Grossherzog, N. Pekinense rubrum plenum, N. roseum plenum, Nymphaea Aurora, Nym, Sioux, Nym, Newton, Nym, Odorata turicensis, Gloriosa, Lucida, Vesuve.

The white Swans which adorn the large pond in the centre of the gardens continue to be the favourites of visitors.

Show Sheds.

14. Displays of flowering plants, palms and other foliage plants were maintained during the various seasons, in the range of show sheds at the southern end of the gardens, and the many fine subjects were a source of pleasure to visitors. Plants of special merit were: the collections of Azaleas, Camelias, Tree Paeonies, Standard Hydrangeas, Caloeolarias, Begonia Lloydii (pendula).

The Large Glass-House.

15. This house was, as usual, kept gay with flowering plants throughout the year, backed up with showy foliage plants and ferns. The fine display with Gloxinia, Cyclamen, Streptocarpus, Primulas, and Bigonias claimed special attention. Of late years great improvement has been made in flowers of Primula obconica and P. malacoides, each of which is also used with advantage for bedding in the open ground. The new varieties grown this year were: Primula obconica gigantea, atrosanguinea, kermesina, lilacina (Violacea) Meteor, Salmon Queen; and Primula Malacoides grandiflora alba, alba fl. pl; Eriksonii, Gigantea, Salamonea.

Cacti and Succulents.

16. The fine collection of Cacti and Succulents staged in the semi-circle facing south, at the northern end of the garden, has been increased by many new species imported from specialist firms.

Sundial.

17. A sundial on a stone pedestal has been erected in the middle of the above mentioned semi-circle. The dial is hand engraved, and specially made to suit the latitude and longitude of Malta, viz: 35°—53′—50″ N and 14°—31′—7″ E.

Labelling.

18. Further work has been done in the way of labelling, and this is greatly appreciated by the many who visit the gardens for the purpose of gaining information as a guide for the selection of suitable plants for their gardens. Besides renewing defaced labels special attention is devoted to labelling species of which no representative in the gardens bears a name.

Lectures.

19 The Superintendent delivered 24 Lectures on floriculture and arboriculture to Apprentice gardeners employed in the Public Gardens, and on a number of occasions conducted parties round the gardens, and explained the many interesting features concerning the plants grown in the area. The Superintendent also furnished information, personally or by correspondence, to persons seeking advice in horticulture and arboriculture.

Visitors.

20. Visitors to these gardens are on the increase, and on Sunday afternoons in winter and spring, consist generally from 1500 to 2000. The number of tourists who visited the gardens during the year is estimated at 73000.

Rainfall.

21. The rainfall recorded for the year under review was 16.68 inches, against against 23.12 inches during the same period last year. Rain fell on 45 days, compared with 56 days last year. The wettest month was December with 5.38 inches. No rain fell in September, the next driest month being October with .10 inches.

Flower and Plant Stealing.

22. This, I am sorry to say, is on the increase; not only do flowers disappear, but also seedlings and sometimes plants from established shrubberries are taken, which is very disheartening as the interference in the grouping spoils the effects hoped to be obtained. Increased watchfulness for perpetrators of offences against the comfort of public property has been made maintained, and will not be relaxed. The Superintendent will, however, welcome assistance from the public in bringing offenders to book.

Rubbish Baskets

23 The number of wire rubbish baskets in use in these gardens (similar to those in other public gardens), have been increased, but they have not proved so absolute cure for litter trouble. It is to be hoped that visitors will become aware of their existence and purpose.

Plants supplied.

24. 249 plants in pots have been supplied to Government Institutions and private growers, besides 30 dozen of Chrysanthemums suckers and a quantity of flower seeds.

Proceeds.

25. The number of oranges, lemons etc. obtained from the public gardens was 6450 dozen which were sold by contract for £183. 7. 0. Other proceeds from the sale of fruits, plants, flowers, flower seeds and firewood amounted to £34. 5. 5, making a total of £217. 12. 5. The total proceeds last year amounted to £266. 10. 6.

BUSKETT GARDENS.

Water Supply and Crops.

26. The work of sinking shafts for increasing the supply of irrigation water, commenced three years ago, has not yet been completed. Temporary arrangements have been, however, made whereby all the drain water derived from the works so far carried out, can be utilized for watering as many of the orange groves as possible, with the result that this year's yield has been by far heavier than last year's crop. In fact, the number of oranges, lemons etc., obtained this year was 11500 dozen, compared with 4300 dozen obtained last year. They were sold by contract for £155. 17. 9. The crop of figs and grapes was also sold by contract for £58. 15. 0, and that of loquats for £15. 10 4. Other proceeds from the sale of fruits, firewood etc. amounted to £55. 14. 3, making a total of £285. 17. 4. The amount collected last year was £265. 18. 1.

Maintenance.

27. The necassary maintenance of these very extensive gardens has received attention, and necessitated, as usual, the employment of a large number of men during the digging and pruning periods, the cost of which is a great drag on our maintenance vote. Oxalis became troublesome in winter and spring, and weeding had to be repeated several times.

Humus Pits.

28. It is proposed to have three large pits with strong stone walls constructed, to receive all the garden refuse such as leaves, grass and all rubbish that decomposes

and make humus, to be mixed with manure, and taken back into the gardens as plant food, of which a very large quantity is needed to meet the requirements of such a large area.

Planting.

29. The following have been planted out in various parts of the gardens during the year:—112 fruit trees, 7 grape fruit trees, 1,000 cuttings of apples and 2,100 American Vines (Ber. x Rip. 420 A.) as stocks to be grafted in due time.

Replacements.

30. The following have been replaced: 68 orange, 22 mandarine and 10 seville orange trees.

Visitors.

31. These gardens have maintained their reputation as a popular resort, and the attendance of the public is on the increase. They are also freely patronised for picnicking, and on Sundays and holidays in Winter and Spring, during favourable weather, they are the rendevous of numerous organized parties in motor buses.

Rainfall.

32. The rainfall recorded in these gardens during the period from 1/9/33 to 31/3/34, was 15.16 inches, failing on 31 days, compared to 26.26 inches on 47 days during the same period last year. The wettest month was January with a rainfall of 6.13 inches. No rain fell in September and October, the next driest month was February with a rainfall of .95 inches.

San Antonio and Verdala Private Gardens.

Maintenance.

33. San Antonio Private Gardens have been maintained in their usual attractive condition. Certain improvements have been made, and 6 ornamental trees and 20 shrubs have been added, and 8 orange trees, 10 fruit trees and 8 shrubs have been replaced.

The necessary maintenance of the Verdala Park has received attention, including the thinning out of surplus growth and removal of decay and dead wood in the numerous trees which adorn this area. During the year, 6 pine trees have been added and 4 pine trees have been replaced.

Lichens—a fungus and an alga, living in symbiotic relation to one another, and causing harm to the tree by keeping out light and air with which the trees in this park were covered, have been cleared off the trees, under the supervision of the Plant Pathologist of the Department.

Other Gardens.

Cultivation.

34. The Public Gardens at Valletta, Floriana, Blata il Bajda, Gżira and Żejtun, have been kept in good order throughout the year, and planted with the view of creating colour. The beds and borders have been gay with flowers.

Improvements.

35. The Blata il Bajda Gardens, close to the Spencer Monument, have been subjected to a thorough overhaul. A large quantity of soil—300 cart loads—having been secured at a low price from a building site at Birkirkara, was used for replenishing the borders and shrubberies which were most in need. Trees and shrubs have been spaced to proper distance, and all overcrowding has been eliminated. The old and unsighty Myoporum hedge enclosing the gardens have been removed and replaced by a new, low hedge supported by a strong wire fence, and by this alteration the full view of the gardens is now open from the roadside. The ground has been planted with Mesembryanthemum presenting a green carpet all the year round, and Oleander shrubs have been planted between the trees all round the gardens.

Lawns and Flower beds.

34. The lawns at the Kalkara gardens, were a great success, these gardens being open to the full sun. The fine display of flowers maintained during the various seasons, were a source of pleasure to visitors.

Other Beds.

35. A handsome new carpet bed was formed at the Maglio Gardens. The design and execution have been warmly commended by the public.

Flower Displays and Vandalism.

36. Throughout the year, splendid displays of flowers have been maintained at Joseph Howard Garden, Rabato. Roses presented a fine sight in Spring, and in Autumn Dahlias formed the chief attraction.

Until a short time ago, it was thought that these gardens were free from vandalism, but I regret to say that there is now a continuance of flower and plant stealing and wilful damage to plants. The matter is the cause of no little chagrin, as by these depredations the effect of the flower beds and borders is spoiled. It seems impossible in these extensive gardens to catch offenders in the act, who select time for this vandalism when their actions are not likely to be observed. If well disposed visitors will help our watchmen to detect the culprits, I do not doubt that we will make a capture at early date.

Cyclists and the Gżira Gardens.

37. It is not pleasant to have to state that same cyclists are very often breaking the Police Law, they ride the paths at all hours, and travel at high speed, with danger to themselves and to others. These gardens, like the Rundle Gardens and the Blata-il-Bajda Gardens, are open day and night, and are still in darkness at night. They are, therefore, more subject to damage than the other public gardens. Both the Gżira and the Rundle Gardens are enclosed by old hedges, which besides being unsighty, serve as a screen to ill-intentioned people. These hedges should be removed and replaced by a low iron railing, and thus the full view of the gardens will be open from end to end.

Planting.

38. The following ornamental trees and shrubs have been planted during the year, viz :—

Maglio Gardens	1 Cercis Siliquastrum.
Sa Maison Gardens	1 Morus Alba.
Blata il Bajda Gardens	3 Acacia cyanophylla, 5 Celtis australis, 2 Sophora pendula, 5 Cercis Siliquastrum, 1 Aesculus Hippocastanum, 2 Pinus halepensis, 12 Ficus lucida, 3 Phoenix canariensis.
Kalkara Gardens	2 Nerium oleander, 1 Bougainvillea *Mrs. Butt.*
St. Michael's Bastion Gardens	1 Morus Alba.
Lower Barracca Gardens	39 Pittosporum Tobira, 15 Coprosma luicda, 4 Acacia cyanophylla, 5 Eleagnus angustinfolia, 4 Tamarix hyspida, 1 Nerium Oleander, 1 Phoenix canariensis, 1 Jacaranda mimosaefolia, 1 Pinus halepensis, 6 Schinus Molle, 1 Sciadophyllum pulcrum.
Gżira Gardens	40 different Shrubs.

Rubbish Baskets.

39. A number of strong, galvanized baskets for use of visitors to deposit waste paper, fruit peelings etc. have been fixed in convenient places in the public gardens, but so far they have not been much used. However, as they become better known, it is expected that all those who value neatness and cleanliness in their surroundings will avail themselves of these conveniences and induce others to do likewise.

Paths.

40. All the paths in the public gardens, except those at San Antonio Public Gardens, which are paved with flagstones, are in a serious state of disrepair, especially those at Kalkara Gardens. The paths in the Blata il Bajda Gardens recently macadamised with chips of stones and dust are already exhibiting signs of tear. All macadamised paths in the public gardens should be converted into asphalt paths, tarred and covered with a coating of tarred screenings. This work must, of course, be proceeded with gradually, owing to its expensive character, but its permanency and many advantages to visitors and to the gardens, will more than compensate for the extra initial cost.

Fairs and other Entertainments.

41. Several public gardens were used on a number of occasions for holding fairs and other entertainments.

PUBLIC PLANTATIONS, MALTA.

Maintenance.

42. The number of existing trees in the public plantations throughout the Island is now 13,145. The work of hoeing, staking, tying, pruning and irrigating the trees received constant attention, and entailed a heavy expense.

Trees and Shrubs Planted.

43. The total number of trees planted durnig the year is 1,542, of this number, 691 represent replanting of trees badly damaged or destroyed by men, goats, motor cars or other vehicles. 211 shrubs were also added, and 13 replaced.

Drawbacks and Difficulties.

44. The planting of oranmental and shade trees along roads and open spaces in these Islands, is a costly undertaking and presents many difficulties. Besides the many natural drawbacks which militate against the existance of public trees, such as the dry climate, the long drought of Summer, the abundance of lime in the soil, the rocky nature of the ground etc., the continuous damage caused by men, by the ubiquitous goat, and, since the advent of motor traffic, by motor cars, is considerable, and is a heavy drain on our funds, and our nursery stock of trees.

It appears that most people do not realise that public trees are public property, and the expense of their planting and maintenance is defrayed by the people themselves.

New Plantations.

45. The following is a detailed list of the new plantations :—

Valletta-Notabile Road	426 pine, and 46 Oleander trees.
Ta Braxia, (railroad)	13 cypress trees.
Outside Portes des Bombes	20 oak trees.
Via Nazionale (Blata il Bajda road) ...	45 Ooaks, 37 Carobs, 1 Oleander tree, and 180 Lantana shrubs.
Princess Melita Road	164 Ficus trees, 5 Schinus terebinthifolius.
Spencer Monument (near St. Michael's Bastion Garden)	15 Palm trees.
Tigne' Wharf, Sliema	22 Tamarix trees.
Qui si Sana Place, Sliema	27 Tamarix trees.
Harper Area (Duke of York Avenue) ...	13 Bougainvillea, 6 Cestrum, 6 Duranta, 3 Tecoma, 3 Lantana.
Siggiewi-Rabat Road	30 Pine trees.

Planting Foundation and Cost.

46. New trees are planted in good foundation, viz : a pit 4 ft. in diameter, trenched 5 ft. deep, and filled with good vegetable earth. The trees are then seccurily staked and protected with wire netting or wooden guards against attack by goats. The expense ranges from 10/- to £2 per tree, according to the nature of the ground, and the distance the soil has to be carted.

PUBLIC NURSERIES, MALTA.

Importance of Public Nurseries.

47. The work in the Public Nurseries demands, and at all times receives, our best care and attention, as it is recognized that these establishments are maintained, first of all to furnish the requirements of the public plantations and public gardens, and secondly to meet the demands made by Government Institutions and private growers. The increased demands for trees for the many new plantations, and for replacing the numerous trees badly damaged or destroyed throughout the year, are, however, much in excess of what can be produced in our Nurseries at Victoria Gate, Valletta, "Tax-Xeuk" (near the Addolorata Cemetary), "Tal Cmand", C. Lia, St. Paul's, Rabato, and therefore the addition of a new large nursery with good soil, shelter and an abundant water supply, is absolutely necessary to meet all demands.

Trees and Shrubs Supplied.

49. The following table shows the number of ornamental trees and shrubs etc. furnished during the year from the Public Nurseries:

To whom furnished.	Ornamental Trees.	Ornamental Shrubs.	Orange and other Citrus Trees.	Other fruit Trees.
Public Plantations	1,542	224	—	—
San Antonio Public Gardens ...	6	174	40	—
San Antonio and Verdala Private Gardens	16	28	8	10
Buskett Public Gardens	—	—	105	112
Other Public Gardens	66	101	—	—
Government Institutions and Private Growers	91	70	222	36
Total	1,721	597	375	158

Sales.

50. The amount collected from the sale of trees, firewood etc., from the Public Nurseries and Plantations was £104. 15. 3 as against £112. 2. 3 last year.

VILLA RUNDLE AND PUBLIC PLANTATIONS, GOZO.

Villa Rundle.

Trees and Shrubs added and replaced.

51. During the year 4 ornamental trees and 140 shrubs have been added, and 11 trees and 32 shrubs have been replaced.

Public Plantations.

Maintenance.

52. The total number of trees in the Public Plantations on the 31st March 1934 was 4,966. They have been regularly pruned, constantly hoed, watered and kept in good order.

Trees added and replaced.

53. The total number of trees planted during the year was 194, of this number 117 represent replanting of badly damaged and destroyed trees.

New Plantations.

54. The following is a detailed list of the new plantations at Gozo:

"Tal-Hamimiet" Valley, 1/o Victoria...	6 Tamarix trees.
Via Feudo San Giorgio, 1/o Victoria ...	10 Mulberry and 2 Olive trees.
Marsalforno Valley	23 Mulberry trees.
Via Marsalforno	1 Oleander and 4 Pine trees.
"Ghadira ta San Raflu" 1/o Kerċem ...	16 Tamarix trees.
"Il Mantka", Marsalforno	15 Tamarix trees.

I have the honour to be,
Sir,
Your obedient servant,

(Sd.) John Briffa,
Superintendent of Public Gardens, Plantations and Nurseries.